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ABSTRACT

Intended for use by researchers, program developers, teacher educators, and other policymakers concerned with the improvement of teacher education, whether general or vocational, preservice or inservice, this state-of-the-art report on performance-based teacher education (PBTE) is an attempt to analyze and summarize what has happened and what is happening in the PBTE or Competency-Based Teacher Education (CBTE) arena, through what the authors feel is an unbiased review of the important contributions made to the PBTE movement by vocational educators and general educators. The recommendations which the authors feel should happen as soon as possible to further develop and enhance the movement are included. The antecedents of the PBTE movement are reviewed, definitions important to the concept are presented, and the characteristics of PBTE programs are described. There is also a description of some of the most important current efforts, models, and projects. Five appendixes provide additional program descriptions, bibliographic information, and sources of additional information about PBTE. (HD)

PERFORMANCE-BASED TEACHER EDUCATION: THE STATE OF THE ART

General Education and Vocational Education

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THE CENTER MISSION STATEMENT

The Center for Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The Center fulfills its mission by:

- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

FOREWORD

This state-of-the-art report on performance-based teacher education (PBTE) is an attempt to analyze and summarize what has happened and what is happening in the PBTE or CBTE arena. We have also offered ten recommendations about what should happen as soon as possible to further develop and enhance the movement.

The report presents what we feel is an unbiased review of the important contributions made to the PBTE movement by vocational educators and general educators. It is our feeling that both groups of educators have been involved in significant research, developmental, and operational efforts and that both groups can benefit from knowing more about what the other has done.

The antecedents of the PBTE movement are reviewed, definitions important to the concept are presented, and the characteristics of PBTE programs are described. There is also a description of some of the most important current efforts, models, and projects. Five appendices provide additional program descriptions, bibliographic information, and sources of additional information about PBTE.

We hope that this report will be useful to researchers, program developers, teacher educators, educational administrators, and other policy makers and leaders who are concerned with the improvement of teacher education, whether general or vocational, preservice or inservice. Our ultimate goal is the improvement of instruction for students at all levels so that they will be better prepared to live and work in our ever-changing society.

Many persons have contributed significantly to the initial development and the revision of this state-of-the-art report on PBTE. Special recognition is extended to Robert E. Norton, Associate Program Director for Professional Development in Vocational Education, for his extensive review of the literature and for his efforts in writing this report. He also served as Project Director of the 1975-1976 National Institute for Performance-Based Teacher Education, of which this report is one product. Special thanks are due Lois Harrington, Program Assistant, for her review and analysis of the literature and for her valuable help in writing and editing the report; and to Janet Gill, Graduate Research Associate, for her extensive document search efforts and other assistance in preparing the report. Acknowledgement is also given to James B. Hamilton, Program Director for Professional Development in Vocational Education, for his guidance and administrative assistance in preparing this document.

Finally, appreciation is extended to all persons (site coordinators, assistant coordinators, and state education agency representatives) from the ten participating institutions and states in the 1975-1976 National Institute for Performance-Based Teacher Education who provided valuable feedback on the preliminary version of this report.

Robert E. Taylor
Director
The Center for Vocational Education

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INTRODUCTION

This publication has been prepared in recognition of the need for a comprehensive document that summarizes, in a fair and insightful manner, the state of the art regarding Performance-Based Teacher Education (PBTE), or Competency-Based Teacher Education (CBTE) as some prefer. Past reports on PBTE by Elam (1971), and the American Association of Colleges for Teacher Education (AACTE) (1974) have been excellent and have made major contributions to the profession. Others such as Schmieder and ERIC (1973) and Houston (1974) have also prepared state-of-the-scene and similar reports that have contributed much to the movement toward PBTE and improved teacher education programs. One deficiency of some of the state-of-the-art reports, however, which we hope this publication rectifies, has been the intentional or unintentional omission of descriptions of significant PBTE efforts by vocational educators. Perhaps because most of these efforts were not federally funded, and hence, did not receive as much national visibility, they have been either ignored or only briefly mentioned in passing in some reports. However, the fact is that many vocational educators, and personnel at one national research and development center have been very much involved in researching the competencies needed by vocational teachers and administrators, and very active in the development of materials and programs that reflect these concepts.

The research conducted by Beamer (1956), Walsh (1958), Crawford (1967), Halfin, and Courtney (1971), and Cotrell (1971 a,b and 1972 a,b,c) is representative of the early research efforts aimed at identifying the competencies important to vocational teachers. Significant efforts by vocational educators to develop curricular materials that incorporate the concepts and philosophy of PBTE have been undertaken by such instititutions as The Center for Vocational Education, Wayne State University, University of Minnesota, and Illinois State University.

We are pleased that funding of the National Institute for Performance-Based Teacher Education by the U.S. Office of Education (USOE) permits us the opportunity to prepare this report as part of the authorized scope of work for the Institute. We, the Institute staff, have accepted the challenge in recognition of the potential contribution such a report can make to the profession. We prepare this report in hopes that it will not only summarize what has happened and what is happening, but that it will also give some direction to future PBTE research, development, and dissemination efforts. With the goal of helping to improve teacher education programs in mind, we have in this report sought to:

1. Summarize and clarify the key concepts and terminology associated with the movement;
2. Summarize the major advantages and limitations of the PBTE approach;

3. Describe a sampling of the major efforts, models, and projects in PBTE in both general and vocational teacher education; and
4. Present some recommendations with regard to further PBTE research and development needs and with regard to procedures that will help ensure the successful implementation of future PBTE programs.

This report is not intended to be a comprehensive description of everything that has occurred in general and vocational education under the rubric of PBTE. Such a report would require several years to compile, several volumes to publish, and more time to read than most persons have available. Hence, we make no claim to having exhaustively documented the whole of the PBTE movement. An extensive, but still quite selective, bibliography has been prepared and included in the Appendix for the reader who wishes to pursue the topic further. We have attempted, however, to present through careful selection, a fair sampling and summary of what has happened and is happening with regard to PBTE in both general education and vocational education. If we have erred in the selection of items included and excluded, it perhaps has been on the side of excluding too many of the excellent efforts occurring in the general education area and including more than a proportionate number of the activities underway in vocational education. As mentioned earlier, we feel too little has been reported in the past relative to the efforts of vocational educators, and this we have tried to correct. At the same time, we have also been careful to make appropriate reference to some of the many events occurring in general education. We all, as educators, have the most to gain by learning from one another regardless of our backgrounds (or special areas of interests), by working together to cooperatively develop the best teacher education programs possible.

Our Perspective

We feel the reader should understand our particular frame of reference as this report is read, as it has undoubtedly influenced the way in which the report has been prepared. Since 1969, staff on the PBTE curricular program at The Center for Vocational Education, Columbus, Ohio, have been involved in the identification of professional vocational teacher competencies and the development of modular materials to deliver on these competencies. Based on our experience in these efforts, we view PBTE, and the approaches and philosophies inherent in its concepts, as offering tremendous potential for the improvement of teacher education programs at all levels and in all areas of vocational and general education. We feel some good and some excellent research, development, and implementation work already has been done by PBTE program developers. Unfortunately, a considerable number of low quality, superficial, hurry-up and get-the-job done efforts have also been launched, especially where mandates have been involved.

Perhaps because we are heavily influenced by our R & D backgrounds and experience, we recommend a thoughtful and well-planned approach to the development and implementation of PBTE programs

and materials even though it requires more time. It is our strong conviction that careful research, study, planning, and development should precede, whenever possible, the implementation of PBTE programs. We also firmly believe that while PBTE holds much promise as a reform movement to improve teacher education, it is one promising approach, and not the only one. Before PBTE can be recommended as the best approach for any given situation, much additional research, development, and program evaluation work is necessary.

We would also hasten to add that we do not wish to join those who are absolute critics of our current teacher education programs. While there is much that needs improvement, most general and vocational teacher education programs have long sought to prepare competent professionals and those involved have worked hard to ensure such. Hence, while there are weaknesses that need to be eliminated, there are also many strengths that need to be recognized and built upon. We view the PBTE movement as an opportunity to do just that: minimize the current weaknesses and build upon the strengths already present. It is an opportunity for self-examination and self-renewal in light of the current needs of our ever-changing society. It is also an opportunity to be more precise about the goals and objectives of teacher education, to design better programs and materials for helping our students achieve them, and, finally, to strive for greater objectivity in the assessment of their achievement.

Audience

This report is prepared for all who are concerned about, and interested in, improving the professional development of teachers for our schools. This group includes the general public, parents, members of boards of education, employers, employees, legislators, government leaders, and educators. It is especially written for those professionals--teachers, counselors, administrators, supervisors, teacher educators, and state department of education personnel--who are most directly involved in, and concerned with, the improvement of vocational and general education for our youth and adults. We hope it will stimulate all who read it to take whatever action they deem appropriate, from their perspective, toward the improvement of teacher education.

ANTECEDENTS OF THE PBTE MOVEMENT

The Need for Change

In December 1971, Elam, in the first widely acknowledged state-of-the-art report on PBTE, stated that "Performance-based teacher education in the United States at the beginning of the seventies is by no means a full-fledged movement (Elam, 1971, p. 1)." Now, less than five years later, it seems appropriate to characterize the movement as close to that: a widespread movement by many institutions in many states to reform and improve teacher education through the development and implementation of PBTE programs.

What has brought about the need for change, especially change of such magnitude? First, it should be reiterated that there is much to commend in what already has been done in most of our teacher education programs by large numbers of highly competent and dedicated professionals. There is also wide recognition, however, among the same group of professionals that there is room for improvement. Few professionals are ever really satisfied with the status quo; hence, they are constantly in search of new and better ways of achieving their goals. Such is the case with professional educators, be they teachers, counselors, administrators, or research and development specialists.

Let us consider some of the characteristics of most traditional teacher education programs that suggest a need for change. Most teacher education programs, general and vocational, have historically been based on time and credit hours rather than competency- or performance-based. Students were certified after completing a certain number of professional education courses, spread out over one or more semesters or quarters of college. In many cases, inadequate attention has been given to diagnosing the level of ability and the specific needs of students entering the program. In some cases this has been at least partly due to the fact that these students were all going to be enrolled in the same required courses anyway. Courses offered to our students have often been only vaguely described in paragraphs prepared for inclusion in the college catalog. In recent years, because of the emphasis on behavioral objectives, more attention has been given to stating the general goals and/or objectives of many teacher education courses.

The student teaching experience has probably been the greatest strength of traditional teacher preparation programs because this provided students with actual field experience with pupils. A shortcoming of many student teaching programs, however, has been the frequent failure to provide adequate structure and purpose for the experience, and/or to provide adequate guidance during and after the student teaching experience. Seldom have cooperating teacher received training for their responsibilities or been given oth than highly subjective criteria for evaluating

the performance of students under their supervision. Furthermore, the assessment of student performance has been almost entirely norm-referenced. Most traditional programs have considered a student's grade-point average--generally derived on the basis of a few written exams, term papers, and perhaps a few subjective field observations--as the basis for assessment. Few traditional programs have specified and made public in advance what prospective teachers were expected to be able to accomplish. Nor have they specified very objectively, the criteria to be used to assess the teacher's actual performance in school situations. That there is need for change and improvement in many of our teacher education practices seems self-evident in light of what we already know about the teaching and learning process.

Impetus for Change Toward PBTE

In 1957, Russia launched Sputnik I. The fact that the Russians beat the U.S. into space aroused the concerns of many Americans who began to seriously doubt the quality of our education system. Consequently, the federal government began to allocate money for experimental programs in education. People began to inquire about what was going on in our schools and began to question many of the procedures and methods that were being utilized. The national spotlight was turned on apparent weaknesses in the educational system and the dangers those weaknesses posed to the nation's prestige and its defense efforts. One result was passage of the National Defense Education Act of 1958 which provided support for greatly expanding the development of area vocational education programs. Its major purpose was the training of "highly skilled technicians in recognized occupations requiring scientific knowledge...in fields necessary for the national defense."

As the 1960's approached, educators began experimenting with programmed instruction, performance objectives, and the multimedia approach. While education was becoming more sophisticated with the new resources made available for teaching by our prospering economy and expanded technical know-how, concern about our educational system continued. Increasing numbers of students were dropping out of school and increasing numbers of graduates were unable to obtain and maintain successful employment at a time when there was a desperate shortage of technical personnel. In response to these concerns, President John F. Kennedy appointed a national panel of consultants that was charged with the task of reviewing and evaluating current vocational programs and legislation, and with making recommendations for improving them. The panel issued a report in November 1962 which led to the enactment of The Vocational Education Act of 1963.

That act, and the Amendments of 1968 which later followed, had great impact on our public educational system. Supported by broadened conceptions of work, by greatly increased appropriations, and by strong support for the construction and operation of area vocational schools, vocational education was to experience

a previously unprecedented growth. Along with this growth was the rapidly expanding need for additional and better prepared teachers.

Near the same time, Congress also passed the Higher Education Facilities Act of 1963. This legislation gave special recognition to the importance of post-secondary education by earmarking funds for the construction of undergraduate facilities. Among other things, this act recognized the need and provided funds for the improvement of programs for the education of teachers.

Other significant events were to occur in the 1960's which would also help lay the groundwork for performance-based teacher education. Drawing on the earlier efforts of Ralph W. Tyler, who proposed an evaluation procedure whereby students would be asked to perform activities stated in behavioral terms, the work of Robert Mager (1962) and others on preparing instructional objectives was to have a lasting impact on many education programs. The work of [illegible] and Hagen (1961), Flanagan (1966), and Ammerman and [illegible] (1966) on occupational and task analysis techniques and procedures was also to influence the development of future educational programs. Talk of the need for accountability began and a movement known as performance contracting, in which industry contracted with school systems for educational services, commenced.

Throughout the 1960's, others were also expressing their concern about the processes and programs being used to prepare teachers. Koerner (1963), Conant (1963), and others identified numerous shortcomings associated with traditional teacher education programs. These shortcomings included, but were not limited to, the fact that (1) programs were not based upon the actual work requirements of teachers, (2) instruction was not being tailored to meet the needs of individuals, and (3) educational outcomes were not being systematically evaluated. In a study conducted by the National Education Association (1967), teachers were asked to evaluate their undergraduate teacher preparation. While according to the study results, their technical subject-matter preparation and general education were considered adequate, their professional education (development of teaching skills) was felt to be less than adequate.

Aware of the public concern and dissatisfaction with educational programs, Congress again enacted legislation designed to impact heavily on America's public educational system. Most notable was passage of The Elementary and Secondary Education Act (ESEA) of 1965, often described as an omnibus aid to education bill. Title IV of this act provided funds for research and related activities which could benefit education, including teacher education. Included under this title of the ESEA bill was the creation of federally supported regional education laboratories.

In 1968, USOE's National Center for Educational Research funded ten institutions to begin research and development activities under a program known as the Comprehensive Elementary

Teacher Education Models. In the request for proposals that was issued to solicit applications, specifications called for the development of elementary teacher education models that would include the use of behavioral objectives and systems analysis. These ten models represented a major thrust by USOE to develop improved programs of teacher education. The model programs, though developed specifically for the education of elementary teachers, have had an enormous impact on the whole of teacher education. Many educators consider this effort to be the crucial turning point toward performance-based education.

Two other important movements of the 1960's should also be given credit for some of the impetus for educational change. Students on campuses across the nation were restless. Demonstrations against our involvement in Vietnam were frequent and sometimes violent. Students were concerned about more than a war of questionable merit; they were crying out for educational reforms as well. One of these desired reforms was the demand for more individualization of instruction--for instruction that was relevant to their individual needs rather than the needs of a mythical majority. According to Impellitteri and Finch (1971), individualized instruction, long a part of education rhetoric, began to gain practical prominence in the later 1960's and early 1970's.

At about the same time, Lessinger (1970) gave birth and leadership to the accountability movement. His book, Every Kid A Winner: Accountability in Education, sparked renewed interest in evaluating the outcomes and effectiveness of our public educational programs. The accountability movement coincided with a taxpayers' revolt and a popular demand to apply business methods of cost-effectiveness to education. The shortcomings of education identified in the 1960's, the behavioral objectives movement, the increased interest in individualized instruction, and the accountability movement reflected the many needs of education which could be partially fulfilled by a new program called performance-based teacher education.

The 1970's was to bring still additional change and innovation in education. The demand for more individualized and flexible programs led to the introduction of the open or informal classroom concept, especially at the elementary level. Schools were responding to the whole-child concept by giving additional attention to values clarification and psychological education. Students wanted not only a greater voice in the development of educational programs, but more responsibility in meeting their own needs. The career education movement brought increased demands for relevance and gave increased emphasis to the idea of education as a life-long process. It introduced a new sense of purpose into education.

In the early 1970's, decreasing school enrollments suddenly resulted in an oversupply of teachers in many subject-matter fields. School boards and school administrators began to be more

selective, seeking in most cases to hire only the most competent teachers available. This increased concern for competent teachers led to public demands for more relevance in teacher preparation programs and in some states, such as Washington and New York, to the establishment of consortiums in which local educators (through their professional associations), teacher educators, and state department of education personnel united in efforts to plan the development and implementation of performance or competency-based programs. By 1972 (Schmieder and McNeely, 1975), 17 states had mandated the performance-based approach as a new or alternative system for teacher education and certification, and 15 others were considering similar action. At the same time in other states, many colleges and universities began research and development efforts in the area of performance-based teacher education. The need had been established and extensive work toward the improvement of general and vocational teacher education programs was underway.

IMPORTANT DEFINITIONS

A total publication could be devoted to a discussion of the terminology associated with the PBTE movement (Ether, 1974), but such is not deemed appropriate for a state-of-the-art report. Rather, a few key terms have been selected which are fundamental to understanding the movement and the language associated with it. Fortunately, there is considerable agreement on most of the terms and phrases used to describe and characterize the important concepts and components of PBTE programs.

The greatest area of disagreement exists over the merits of the two phrases "performance-based teacher education" (PBTE) and "competency-based teacher education" (CBTE). To present two concise discussions of this issue, a section of the AACTE's PBTE Project Committee's report (1974) is first cited in full. Their position statement is followed by one developed by Houston (1972). Please note their similarity.

PBTE Versus CBTE

> Considerable energy has been consumed--some within the councils of the AACTE Committee--in arguing the relative merits of the phrases 'performance-based teacher education' and 'competency-based teacher education.' Some proponents of CBTE apparently believe the word 'performance,' with its connotation of physical activity, minimizes the importance of professional knowledge and the conceptualization and planning which may not be visible when a teacher 'performs' in the classroom. They believe the term 'performance' is too narrow, that it may encourage mimicry and superficial role-playing rather than the solid professional insight and ability which enable a good teacher to cope with novel situations.
>
> Proponents of PBTE counter that for many persons the term 'competency' connotes emphasis upon knowledge rather than practice and hence is likewise too narrow. They feel that the current movement is in significant part a reaction against programs which turned out teachers who were competent in the sense that they could make high scores on National Teacher Examinations or do well on master's degree orals but could not in fact perform well in the practical teaching situation. They feel further that emphasis upon identification of specific competencies leads to artificial fragmentation of the teaching process and to a 'checking off' of competencies which is little improvement over credit-counting.
>
> This conflict may be reconciled, the Committee believes, by recognizing that if one is pressed to define his terms, both concepts are necessary. Those

who prefer PBTE do not claim that teacher education should be based on just any performance but on competent performance. 'Competence' is understood, taken for granted. PBTE really means (C)PBTE. Likewise, those who prefer CBTE are not talking about competence in a limited pedantic sense but about competence in teaching performance. In this case 'performance' is understood, taken for granted. CBTE really means C(P)BTE. Both concepts are necessary.

The AACTE Committee decided to stay with its original title, largely for reasons of convenience and because it saw no compelling reason to change. It is perfectly happy if anyone else wishes to use the term CBTE where it uses PBTE and considers the terms interchangeable within the context of its work (AACTE, 1974, pp. 10-11).

Performance or Competence

As one talks to proponents of competency-based and performance-based teacher education terminology, it becomes abundantly clear that they refer to the same movement. Advocates of performance-based terminology refer to the *way in which teachers demonstrate teaching knowledge and skills.* That demonstration is observable (and their objectives are to 'write,' 'do,' 'describe;' not 'understand' or 'perceive' which are nonobservable). Further, performance reminds us that knowledge of content and teaching strategies is not sufficient in teaching--overt action is important.

Competency-based emphasizes a *minimum standard;* it adds criterion-levels, value orientations, and quality to the definition of the movement. While competency advocates note three levels for criteria--cognitive, performance, and consequence--they press for the latter as the most significant measure of effectiveness. Performance advocates, also recognizing consequence as the ultimate test of an individual's effectiveness, point out that many intervening variables affect results (pupil ability, interest, motivation, availability of resources). They stress that our present understanding of these variables and our inability to control them adequately in field settings preclude consequence objectives as realistic requirements. Thus, objectives requiring performance become the major ones in a teacher preparation program, and performance-based is more descriptive as a generic name for this movement.

Both performance-based and competency-based express important elements of the movement--one focusing on objectives, the other on criteria. Both are useful; not conflicting (Houston, 1972, pp. 25-26).

Staff at The Center concur with these positions (AACTE and Houston). Although the 100 Center modules are called PBTE modules since they stress performance in an actual school situation, they could just as easily be called CBTE modules since they are based on identified teacher competencies and students must achieve a minimum level of competency based on specified criteria.

Competency

Many people may often talk about competencies without really defining what they mean. Perhaps the reason for this is that a competency is defined in many different ways. Norton and Huang (1975) define competency in a very general way as follows: "Competency refers to achievement of the knowledge, skills, and attitudes required to perform a given task." The key aspect of this and most other definitions of competency is the recognition that all three learning domains--the affective, the cognitive, and the psychomotor--are involved. In this sense, one could refer to a student being competent at a particular level in a particular skill.

However, "competency" is also the term used to designate the skills or performance elements which form the basis of instruction. For example, The Center's PBTE modules are based on 384 identified professional performance elements (or competencies).

An additional source of confusion is that however the term competency is defined, it is often unclear as to what level of competency is being discussed: survival skills, beginning-level competency, or all competencies needed by seasoned teachers.

This need not be an area of confusion, however, as long as one is careful to determine how competency is defined and what level of competency is understood in any discussion concerning C/PBTE.

Module

Modules, because of the advantages they offer in terms of individualization and self-pacing, are frequently the main basis for instruction in PBTE programs. There is practically no agreement, however, as to what really constitutes a module. Typically, a module is a printed instructional (or learning) package containing a rationale, prerequisites, objectives, strategies, resources, and criteria tests. However, modules vary widely in form, length, and scope from program to program. Some "consist of a one or two page outline while others are comprehensive, self-contained instructional packages of fifty or more pages each (Norton and Huang, 1975)."

Objectives

The very notion of PBTE implies an explicit idea of what the student is to be able to do. The emphasis is on achieving

objectives rather than on completing a specified number of learning activities. The objectives are stated in advance, described in explicit and measurable terms, and made known to the student in advance of instruction. Houston (1972) states that three types of objectives are pivotal in performance-based programs: cognitive, performance, and consequence objectives.

> Cognitive Objectives.--the learner is expected to demonstrate knowledge and intellectual abilities.
>
> Performance Objectives.--the learner is expected to be able to do something as opposed to simply knowing something. While knowledge is required to know how to perform correctly, emphasis is on observable behavior.
>
> Consequence Objectives.--the learner is expected to bring about change in others. In order to finally assess a teacher's ability to teach, the achievement of his/her pupils is examined (Houston, 1972, p. 5).

Other objectives frequently associated with performance-based programs include:

> Affective Objectives.--those objectives which describe the human attitudes that are important to one's behavior in educational settings (values, feelings, appreciations, and interests toward ideas, people, and things) which the learner is expected to exhibit.
>
> Enabling Objectives.--those objectives which describe the knowledge, skills, and attitudes which the learner must attain at some intermediate point if he/she is to achieve the terminal objective.
>
> Terminal Objectives.--those objectives which state what the learner is expected to be able to do at the end of instruction. They specify the conditions under which performance is to occur and the level of performance expected.

Many other terms (needs assessment, feedback, personalized instruction, individualized instruction, etc.) are also commonly used in the PBTE literature. For definitions of these and other terms, the reader is referred to Schmieder (1973) and Ether (1974).

CHARACTERISTICS OF PBTE PROGRAMS

The most widely cited list of PBTE program characteristics is undoubtedly the list of "Essential Elements," "Implied Characteristics," and "Related and Desirable Characteristics" prepared by Elam for the 1971 AACTE report. The report stated that the essential elements are "generic" and that "only professional training programs that include all of them fall within the AACTE Committee's definition of PBTE (Elam, 1971, p. 7)." These generic elements, along with lists of the implied, and related/desirable elements, are presented in the diagram on p. 17 in abbreviated form. For a detailed discussion of these important characteristics, the reader is referred to the Elam report.

In 1974, AACTE published an update of its 1971 report (AACTE, 1974). Included in the 1974 report as Appendix A is a revised listing of the "Essential Defining Characteristics of PBTE" as viewed by the AACTE Committee. The revised listing is presented in full on pp. 18-20 for comparison purposes with the 1971 list. The differences in the two listings are highlighted by the use of italics.

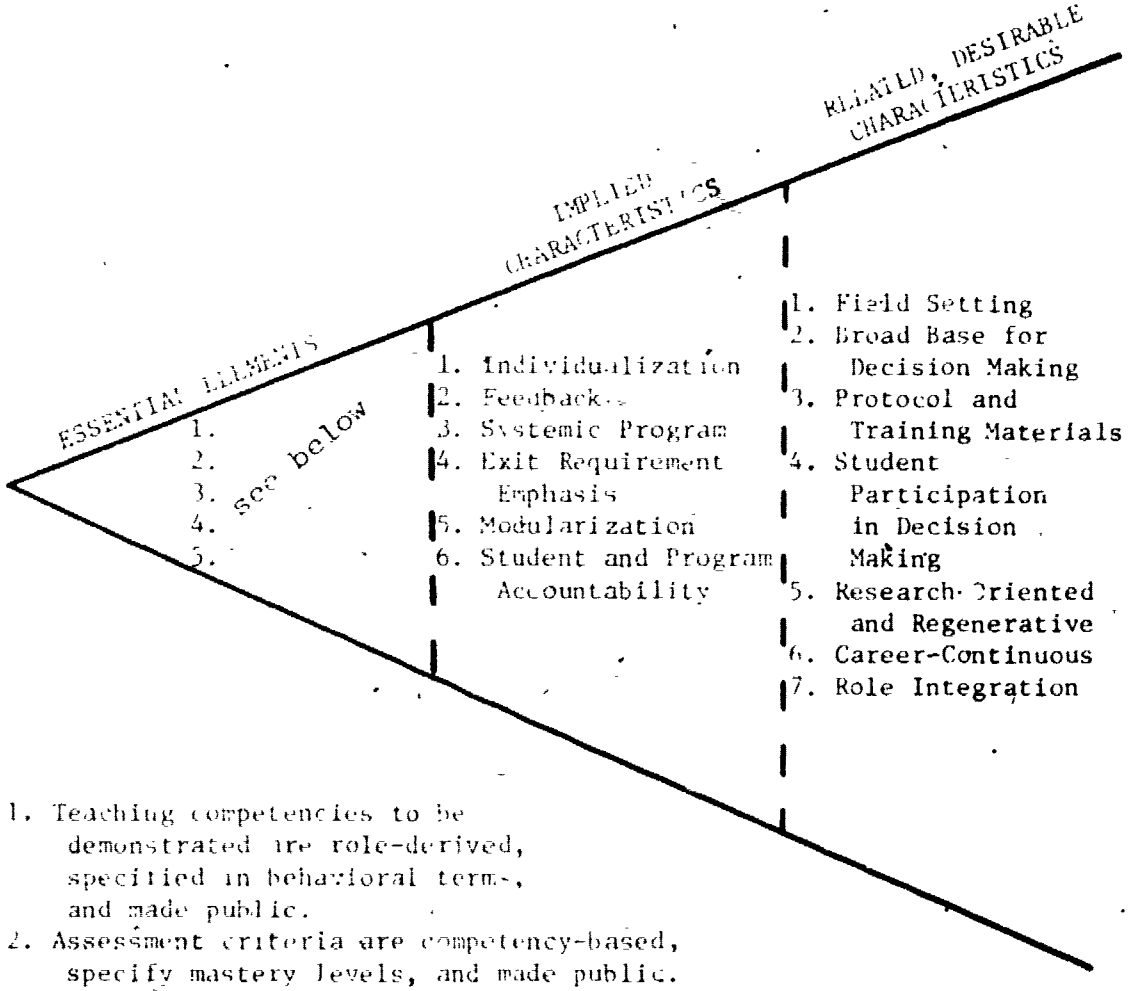
The 1974 report goes on to say that "the Committee's conception of PBTE has not changed in any significant respect (AACTE, 1974, p. 7)" since the publication of its 1971 report. However, because of the definitional problems that the Committee feels still exist, it chose in the 1974 report to "approach the characterization of PBTE in a somewhat different manner (p. 7)."

> The question may reasonably be asked, 'How does the Committee's conception of the meaning and implications of PBTE differ in 1973 from what is was in 1971 when the Elam report was prepared?' In three respects:
>
> 1. The Committee would now say that the use of modules is not a necessary, defining characteristic of PBTE programs but simply a practice commonly followed in order to facilitate adaptation of instruction to individual needs and abilities: It often helps materially to avoid a rigidly time-based instructional design.
> 2. The Committee would now place much greater emphasis than earlier on the significance in the design of teacher education programs of stating formal hypotheses and setting up evidence-gathering and record-keeping systems so as to facilitate the testing of such hypotheses. This is in recognition of the key importance of building the knowledge base which it sees as a sine qua non for a full-fledged profession.
> 3. The earlier report may have given the impression that goals (competencies) which cannot be defined in assessable terms should be eliminated. Not so. The obligation is to strive for clarity, rigor,

explicit definition. But if the teacher educator is convinced that something belongs in the program even though he cannot measure it, he should feel perfectly free to include it but recognize that that aspect of his program is not performance-based. It may simply be conviction-based.

Although it was not explicitly stated in the Elam paper, the Committee believes that if a program, or an identifiable portion thereof, does not exhibit the essential characteristics to an appreciable degree, it should not be designated as PBTE. It is perfectly legitimate, however, to be operating a properly labelled teacher education program which is partly performance-based and partly not (AACTE, 1974, p. 10).

Conceptual Model of Performance-Based Teacher Education



1. Teaching competencies to be demonstrated are role-derived, specified in behavioral terms, and made public.
2. Assessment criteria are competency-based, specify mastery levels, and made public.
3. Assessment requires performance as prime evidence, takes student knowledge into account.
4. Student's progress rate depends on demonstrated competency.
5. Instructional program facilitates development and evaluation of specific competencies.

(Elam, 1971, p. 22)

A teacher education program is performance-based if

1. Competencies to be demonstrated by the student are

   derived from explicit conceptions of teacher roles in achieving school goals,

   supported by research, curriculum theory, task analysis, and/or explicit value judgment,

   stated so as to make possible assessment of a student's behavior in relation to specific competencies, and

   made public in advance.

2. Criteria to be employed in assessing competencies are

   based upon, and in harmony with, specified competencies,

   explicit in stating expected levels of mastery under specified conditions, and

   made public in advance.

3. The instructional program provides for the development and evaluation of the student's achievement of each of the competencies specified.

4. Assessment of the student's competency

   uses his performance as a primary source of evidence,

   takes into account evidence of the student's knowledge relevant to planning for, analyzing, interpreting, or evaluating situations or behavior,

   strives for objectivity, and

   facilitates systematic study of the relations between instruction, competency assessment and achievement of school goals.

5. The student's rate of progress through the program is determined by demonstrated competency (AACTE, 1974, p. 32).

Essential Characteristics of PB Instruction

In the judgment of the Committee, the essential characteristics of any performance-based instruction program are:

1. The instructional program is designed to bring about learner achievement of specified competencies (or performance goals) which have been

   derived from systematic analysis of the performance desired as end product (usually that of recognized practitioners) and

   stated in advance of instruction in terms which make it possible to determine the extent to which competency has been attained.

2. Evidence of the learner's achievement

   is obtained through assessment of learner performance, applying criteria stated in advance in terms of expected levels of accomplishment under specified conditions and

   is used to guide the individual learner's efforts, to determine his/her rate of progress and completion of the program and, ideally, to evaluate the efficacy of the instructional system and add to the general body of knowledge undergirding the instructional process.

The foregoing implies, of course, that

1. Instruction is individualized to a considerable extent.
2. Learning experiences are guided by feedback.
3. The program as a whole has the characteristics of a system.
4. Emphasis is on exit requirements.
5. The learner is considered to have completed the program only when he has demonstrated the required level of performance.
6. The instructional performance is not time-based in units of fixed duration.

In addition, a performance-based teacher education program usually has other characteristics, listed as 'desirable' in the Elam report:

1. The program is to a considerable extent field-centered--to enhance realism.
2. There is a broad base for decision making--for logistical reasons as well as the requirements of democracy and professionalism.
3. Instruction is often modularized and uses protocol and training materials--to achieve flexibility and realism within the college setting.
4. Professional preparation is career-long--inherent in the concept of the professional teacher.
5. A research component is often built into the program--to enhance the knowledge base on which the profession depends (AACTE, 1974, p. 7).

ADVANTAGES AND LIMITATIONS/CRITICISMS

Advantages of PBTE

Various writers and program developers claim numerous advantages of PBTE programs over the traditional teacher education programs. The most important advantages claimed are as follows:

1. Learning tasks called competencies are clearly stated in performance terms so that the student knows in advance exactly what he/she is expected to achieve.
2. Criteria used to assess competencies are based on performance objectives, specified in advance, and made known to the students. Hence, the learner knows exactly how he/she will be evaluated.
3. Students are frequently provided immediate feedback concerning their progress, resulting in almost continuous reinforcement.
4. Program design allows for more individualization and personalization of instruction:
   a. students progress at their own learning pace or rate
   b. students choose among alternative and optional activities
   c. students have more opportunity to pursue their own learning style
   d. evaluation occurs when the student is ready
   e. learning experiences are tailor-made to meet students' needs and interests
5. A large share of the responsibility for learning is shifted from the instructor to the student.
6. Emphasis is placed on the student's ability to perform rather than only on the student's knowledge of teaching as assessed by the paper and pencil method.
7. Greater emphasis is placed on obtaining field-based experiences as opposed to only classroom and laboratory experiences.
8. Instruction is competency-based rather than course-based or time-based.
9. Emphasis is on exit requirements rather than on entrance requirements.
10. Assessment of the student's competency strives for objectivity, and is criterion-referenced rather than norm-referenced.
11. Program designs are such that they lend themselves to needed research on the teaching-learning process.
12. Decision making is shared by all (teachers, teacher educators, administrators, etc.) who are affected by program decisions.

Limitations/Criticisms of PBTE

A review of the literature on PBTE quickly reveals that there are some limitations, concerns about, and criticisms of the movement. Many of PBTE's strongest supporters are legitimately concerned with certain gaps in our current knowledge base and/or methodology that may prevent achievement of the full potential of such programs. Others are totally critical of the whole movement, sometimes denouncing it without explanation as "anti-intellectual," "ill-conceived," "poorly planned," "mechanistic," and "fragmented." A careful review of what seem to be well thought out and sincere concerns, criticisms, and/or limitations is presented here:

Lack of an Adequate Research Base.--There is little doubt about this but, of course, the same is true for traditional programs of teacher education. Besides the lack of research on what specific teacher behaviors positively affect student outcomes, there is also little research available as yet on the effects of PBTE programs on students. In spite of these knowledge gaps, program advocates believe that the PBTE approach currently offers an excellent way for educators to begin to make needed improvements in teacher education programs.

Difficulty of Identifying and Validating the Essential Competencies.--There is a definite lack of research on the competencies needed to be a good teacher. We know little about the way people learn. Therefore, the teacher competencies that are identified may not be the skills teachers need to increase student learning. Rosenshine and Furst (1971) state that our empirical knowledge of teacher effectiveness is so meager that program development is impossible or at best premature. Until there is adequate research on what a good teacher does to contribute to student growth, little can be said against this argument. However, this argument applies to conventional teaching programs as well as performance-based programs. In conventional programs, there is often no specific identification of the skills being taught. At least in a performance-based program, the competencies are specified in advance and people are able to judge the importance of the teaching skills that are being taught.

Sum of the Parts May Not Equal the Whole.--Broudy (1972) and others feel that the PBTE movement would fractionate teaching by breaking it down into parts which, when put together, would not equal the whole. The ability of students to demonstrate the individual competencies, he says, does not guarantee the teacher's success in the classroom. Sinatra and Masla (1973) have responded to Broudy's criticism by arguing that it is impossible to even begin to look at the whole of teaching without breaking it into parts. In performance-based programs, the component parts are carefully identified and categorized. The entire program is

publicly laid out and it can be seen how the acquisition of one competency builds on another. This gives the student the opportunity to move toward the achievement of the whole of teaching through a step-by-step acquisition of essential subparts. In addition, each student's field-based experiences while an intern, a student teacher, and/or an inservice teacher provide excellent opportunities for the student to put all the pieces together under the supervision of a master teacher.

PBTE Programs Are Not Humanistic.--Part of the whole-child concept includes attending to the affective needs of students. Some people see PBTE as a cold, mechanistic approach that ignores the affective domain and deals only with the cognitive needs of the students (Arends, 1971). A few others imply that in PBTE programs, there are fewer opportunities for students to explore, express, and comprehend their feelings. People are asking if PBTE comes to grips adequately with the social, emotional, and higher order cognitive levels of learners. Proponents of PBTE argue strongly that performance-based programs need not be dehumanizing, mechanistic, or restrictive. Objectives in the affective domain are hard to measure (regardless of the method of instruction), but they can be stated in behavioral terms. Humanists fear that what they consider trivial "laundry lists" of teacher competencies may preclude the search for other types of competencies that defy precise measurement. Perhaps, as with conventional programs of teacher education, PBTE programs will be as humane as the persons who are operating them.

Lack of Adequate Evaluation Methodology and Instrumentation.--The concern about weakness in the evaluation procedures currently used in many PBTE programs is very well expressed by Krathwohl. He states:

> It is only if one has an adequate evaluation program that one can call a program performance-based! One of the important distinguishing characteristics of PBTE is that the student is not given credit for simply having completed an instructional experience; he or she must demonstrate mastery of both content and associated behaviors. Yet programs claiming to be PBTE give this aspect short shrift. Current evaluation techniques tend to be limited, amateurish, or even sometimes omitted. In many instances they do not go beyond simply having the instructor sign off that a student has completed certain experiences. This is no advance over past procedures (AACTE, 1974, p. 40).

However, these less than adequate efforts on the part of some programs calling themselves performance-based do not negate the very real potential for increased objectivity of evaluation based on specified competencies and criteria.

Shortage of High Quality Software.--Unfortunately, as with almost any other educational movement, some persons are quick to turn out poorly developed and untested materials or to place new covers with different titles on old materials. As reported by the AACTE Committee:

> A great deal of the material which has come to the attention of the Committee is poorly conceived, technically deficient, superficial, and shoddy. High quality, research based and field validated materials are costly and time consuming to produce; and yet without the benefit of adequately developed materials, the full potential of PBTE is unlikely to ever be achieved. This is an area that deserves further attention and cooperative action by those concerned to establish quality standards for evaluation of materials and arrangements for publication and sharing of PBTE instructional materials (AACTE, 1974, p. 15).

Difficulties Associated with Instructional Management.--PBTE instructional programs are very different in terms of the organization and scheduling of instruction, the roles played by both the students and the instructors, and the types of management and evaluation procedures required. Students in PBTE programs are more accountable for their own learning, and are given more choice and responsibility in the selection of learning options. Increased individualization of instruction is bound to pose challenging management problems. Consider for example, a program in which 100 different modules are available, from which preservice students must complete 20 required modules and ten additional modules of their own selection. Student assessment forms for each module, as well as optional and recommended outside resources, must also be accounted for. Each student is working at his or her own rate. Record keeping of all this activity and these resources can become a nightmare. However, with proper planning, a workable management system can be established.

PBTE Programs May Be Costly.--Little data is available on the costs of operating PBTE programs as yet. Two major types of costs are involved, however: developmental (or start-up) costs, and operational costs. As with most other new programs, there are initial costs to train personnel and provide them with the time needed for such activities as planning the program, developing or securing materials, and working out the management procedures. At this point, it is unknown whether, after a developmental stage of three or more years, the cost of operating a program will be comparable, or more, or less, than existing programs. While more expensive materials and equipment, more costly assessment procedures, and more record-keeping devices are involved, there may be offsetting savings through greater use of self-instructional materials, use of independent and unsupervised peer group study sessions, and the elimination of many typical class meetings.

CURRENT EFFORTS, MODELS, AND PROJECTS

Major efforts relative to PBTE are currently underway in all academic and vocational areas, for preschool, elementary, secondary, post-secondary, adult, undergraduate, and graduate programs. Development, implementation, and dissemination efforts are in process at colleges and universities, and in education agencies at the local, state, regional, and national levels.

The teacher education project which has probably done the most to foster the careful development of PBTE programs and which has undoubtedly done the most publishing of PBTE resource materials has been the American Association of Colleges for Teacher Education (AACTE). Under the leadership of Karl Massanari; associate director, AACTE, and director, PBTE project, and the Performance-Based Teacher Education Project Committee (established in 1970), the AACTE has already published twenty-one booklets in its PBTE Monograph Series and has begun the preparation of a series of technical assistance papers. The project, which is now in its seventh year of operation, has also sponsored and conducted numerous national and regional conferences focusing directly on the problems and issues involved in implementing and maintaining PBTE programs. AACTE's efforts, supported by a grant from USOE, have also focused on determining the state of the art of the national performance-based movement, and on fostering a widespread national dialogue about the progress, prospects, and problems of the movement.

Another national effort, launched in 1972 and also supported by USOE, was the Multi-State Consortium on Performance-Based Teacher Education. Perhaps best known for its widely disseminated and read PBTE newsletter, the effort represented a concerted approach by 13 states to promote the cause of PBTE, particularly within their own states. The project, administered by New York State and directed by Theodore E. Andrews, had as one of its primary objectives the dissemination and communication of information about performance-based teacher education. It also focused on the implications of PBTE for state certification; the interstate sharing of information, materials, and personnel; and helping member states develop management systems for performance-based approaches to teacher education. Under Teacher Corps' funding, 17 states (including the 13 formerly in the Multi-State Consortium) now interact and collaborate under the auspices of the new National Council of States on Inservice Education.

A third prominent national effort is The National Consortium of CBE Centers. The CBE consortium is an informal association of institutions involved in the development and implementation of competency-based teacher education. Also supported by USOE, the consortium consists of nine National

CBE Centers, each of which was an outgrowth of the design and development activities initiated in 1968 as the Comprehensive Elementary Teacher Preparation Models. Each of the centers is involved in conducting CBE research and development activities for implementing preservice and inservice program models, and in providing developmental assistance and training to others interested in installing competency-based education programs. The consortium serves to coordinate efforts of the nine centers, to provide CBE leadership at the national level, and functions as a clearinghouse for providing developmental program assistance.

A broader overview of the extensive and pervasive nature of the many other PBTE, CBTE, and CBE efforts is presented in Appendix C.

What is critical in considering the many PBTE (CBTE and CBE) activities is how each of the programs, projects, consortia, and clearinghouses defines and delineates PBTE. As mentioned earlier in this report, there are a number of terms associated with the PBTE movement: individualized, self-paced, field-based, criterion-referenced, multi-media, accountability, modularized, etc. However, there is a reason why these programs are called "competency" or "performance" based. Legitimate PBTE (and CBTE) programs always abide by the two characteristics inherent in their name: (1) they are based on identified and validated competencies; and (2) in order to show competency, the student must perform the skill under actual school conditions to specified standards. Currently in the field, there are few programs which rigidly adhere to both of these characteristics.

Due possibly to the speed with which the PBTE movement has swept the nation, or to the pressure of mandates, or to a zeal to improve teacher education programs, many of the programs and projects presently under development or in operation have incorporated varying pieces of the form of PBTE, frequently without capturing the real substance of PBTE. There are a wide range of activities being conducted under the banner of PBTE: modules without programs; programs without (or with loosely defined) competencies; competencies without programs; programs which equate field-based with competency-based; programs with competencies but without performance; programs with performance but without competencies, etc. The remainder of this section describes some of the varied research and development efforts going on relative to the identification and validation of competencies, the development and implementation of programs, and the development of assessment procedures and instrumentation.

Competency Identification and Validation

Patricia Kay (1975) identified three basic procedures for deciding what competencies should be included in a PBTE program. From least to most operational they are (1)

theoretical approaches, (2) task analytical approaches, and (3) course conversion approaches. Kay says that probably no program has used only one approach and that most programs likely contain elements derived from all three. She further delineates the task analytic approaches into the following five sub-categories: (1) basic task analytic procedures, (2) analysis of the teaching performance associated with curriculum packages, (3) school learner needs assessment, (4) analysis of projected teaching roles, and (5) empirical hypothesis generating.

The task or role analysis procedure with its many variations is probably the most commonly used by vocational educators. This approach typically involves identifying the competencies involved in teaching in a given area or at a given level by (1) conducting a search of the literature; (2) asking teachers working in that area and/or at a given level to describe what they do, what they feel they should be doing, and what additional skills they feel they need; and (3) asking teacher educators, supervisors, and administrators to describe and verify what teachers do and/or should be doing. The studies by Walsh (1958), Crawford (1967), Halfin and Courtney (1971), Cotrell et al. (1971a,b and 1972a, b,c), and Benson et al. (1974) are examples of this procedure. Criticism of this approach stems from the fact that this procedure may perpetuate the status quo since it tends to emphasize competencies which represent what teachers do, and not necessarily what teachers do or should do that, in fact, promotes student learning.

One type of the task analytic approaches, the school learner needs assessment approach, appears most desirable and is yet perhaps the most difficult and least viable at this time. While the goal among teacher educators has long been to train teachers in the skills which will result in maximizing student achievement, to date there has been no research which conclusively links particular teacher behaviors to specific student achievement. Nonetheless, efforts to identify competencies using this procedure have been attempted. For example, in Minnesota, the Task Force to Study Programs Leading to Certification for Teachers of Social Studies (1973) started with the identification of "pupil outcomes toward which a competent teacher makes progress." From there, they generated a list of "teacher behaviors which facilitate achievement of pupil outcomes." Finally, they developed a list of "competencies which facilitate those teacher behaviors."

The course conversion procedure is also very frequently employed, particularly in states where a mandate has been issued. This approach commonly results in the translation or reformulation of present courses into new statements of behavioral objectives or competencies. The knowledge and skills a teacher should possess are inferred from the current

course content. As with the task analytic procedure, this approach tends to perpetuate the status quo, and hence is not likely to result in many significant program changes. An advantage of this approach, however, is that it is expedient--changes can be made quickly and at relatively low cost.

The theoretical approach, while conceptually very promising, is undoubtedly the most costly and difficult to utilize. This approach requires extensive study and research and a high degree of both technical skill and conceptual expertise among program developers. Theories and models of learning and human behavior are complex and abstract, and hence require a great deal of interpretation and extrapolation. A further limitation is that theoretically derived programs can only be successful if the underlying theories used are, in fact, accurate descriptions of the realities of the teaching process.

In specifying competencies by any one of these three procedures, there has been an attempt made in most cases to identify teaching competencies in each of the three learning domains: cognitive, psychomotor, and affective. Although critics have repeatedly accused PBTE programs of being dehumanizing and mechanistic, in many programs special efforts have been made to include the affective element. One of the categories specified by Wright (Benson et al., 1974) is "Nurture Humaneness." Florida International University's list of competencies includes "provide positive teacher-student interaction." Weber State University's competencies include "interaction skills." The University of Texas at Austin composed each competency using a synthesis of three parts: Problem Solving, Human Relations, and Job Task. Likewise, the affective element is evident throughout Cotrell's elements and criteria, and the University of Nebraska's NUSTEP program.

One variable involved in competency generation is the level of specificity of the competency statements. To illustrate, the following list contains examples of various persons or institutions that have identified teacher competencies and the number of competencies they identified:

Michigan Model Elementary Program	2,700 competencies
Cotrell	384 performance elements
Wright	327 teaching tasks
Courtney	130 items
Walsh	107 competencies
Burke	80 competencies

University of Texas at Austin	27 critical competencies
Florida International University	7 generic competencies
Lehigh University	4 competencies
Hite	2 competencies

Compare the scope of a Cotrell competency, "Write a Lesson Plan," with the scope of Hite's two competencies: Teachers can state objectives, and Candidate's pupils demonstrate growth consistent with stated objectives.

How many original competencies are identified and what level of specificity is used is not critical, however. What is critical is that each competency is ultimately broken down to a level of specificity which is measurable. Each of Cotrell's 384 elements is further broken down into measurable criteria. For example, the element "Write a Lesson Plan" is broken down into eight criteria, one of which is "The lesson was based on the specific student performance objectives." Similarly, at the University of Texas at Austin, the 27 critical competencies are broken down to 246 specific competencies. Therefore, whereas competencies may vary in scope and breadth, the ultimate product of the competency identification process must be measurable criteria if the program which is developed around these competencies is to be, in fact, performance-based.

Another variable is the level of mastery for which the competencies were identified. The Cotrell study, under the sponsorship of USOE, attempted to identify all the competencies important to the successful vocational teacher. On the other hand, the State University College of New York at Buffalo and the Frieder model (Okey and Brown, 1972) sought to identify competencies for the beginning teacher only. Many institutions have started with existing competency lists and selected from those lists the competencies which specify the level of mastery for which they are training teachers at their particular institution, state, or instructional area.

The validation procedures used by program developers to authenticate the competencies which were identified are for the most part similar to the procedures used to identify them. Although the term "validation" is used, it is more nearly a "verification" process. Lists of competencies were (1) compared to other lists; (2) given to educators at all levels and rated as to the importance of each item; (3) subjected to Q-Sort and Delphi techniques; and (4) compared to the literature.

Using these identification and validation procedures, or some combination thereof, a large number of competencies have

been generated. There are lists of competencies generic to all teachers and lists of competencies needed by teachers of specific areas: industrial arts, agriculture, distributive education, English, elementary education, social studies. (A listing of some of the available lists of competencies and their sources is included in Appendix B.) What is needed now, according to Warmbrod (1974), is not identification of more competencies, but an effort to make sense and order out of the ones we have--which ones do make a difference. Research is underway at a number of institutions for the purpose of relating teaching behaviors to student learning. The National Institute of Education (NIE) is supporting projects in this area by the Far West Laboratory, the California Commission for Teacher Preparation and Licensing, and the Research and Development Center for Teacher Education in Austin. According to Rosenshine (1974), large scale studies about the relationship between teaching competencies and student achievement are also underway at the Center for Educational Policy Research at Harvard, the Institute for Development of Human Research at the University of Florida, the Stanford Research Institute, the Bureau of Educationally Handicapped, and the Purdue Educational Research Center.

Module Development

For most of the PBTE programs currently in existence, the specified competencies have been formed into some type of printed package. Most packages are called modules, some are called ILPs (Individualized Learning Packages), and some LAPs (Learning Activity Packages). While modules are not an essential characteristic of PBTE, their flexibility and adaptability facilitate performance-based instruction. Some PBTE materials have been given special institutional or other type names (e.g., POP Kits, WILKITS, WAYNE KITS, MINN MODS). These packages vary in length from one page outlines to totally self-contained booklets which include all necessary information and directions for use. The outline-type modules serve primarily to make public the competencies; many are similar to course prospectuses. Since two of the most desirable characteristics of PBTE are that instruction should be self-paced and individualized, the most fully developed, self-explanatory modules seem preferable. The majority of modules developed thus far do not include options for performance of the skill in an actual teaching role; the final experience or post assessment tends to be of the paper-pencil variety or the student's performance in a simulated situation is assessed using a performance checklist or the instructor's subjective judgment.

The modules produced by The Center for Vocational Education under the sponsorship of NIE are fairly unique in that each module (1) includes a final learning experience which always involves student performance in an actual school situation, (2) involves the use of a Teacher Performance Assessment

Form" which lists detailed criteria for successful performance, and (3) has been subjected twice to a rigid testing and revision process. If there is a single point at which existing programs break down in their quest to become truly competency- or performance-based, it is probably in the area of final assessment. If student competency is measured by a paper and pencil test, or if competencies are specified only to serve as a structure for course development and not as a basis for assessment, then PBTE is little different than the traditional course-approach to teacher education.

Existing modules generally have fairly similar elements as follows:

1. A listing of prerequisites
2. Directions for using the module; often this is handled using a flow chart
3. Rationale or introduction explaining the importance of the competency being covered
4. A listing of performance objectives: terminal and enabling
5. A listing of terminology, resources, and materials needed
6. Preassessment--usually a short-answer test
7. Explanation of the activities to be completed in order to reach each objective; this is often in chart form
8. Information sheets
9. Feedback devices--most often essay or objective tests
10. Postassessment--usually a short-answer test, but in some cases, performance at the planning or simulation levels and occasionally performance in an actual school situation are involved

The activities involved in most available modules are structured to offer the learner a number of alternate routes for reaching an objective. In addition, optional, enrichment, or quest activities are frequently included for the learner who desires to pursue a particular subject further. Activities typically involve reading, role-playing, planning, reacting to case studies, videotaping performance for critiquing by peers, and discussing. A number of modules also include recycling activities so that a student who does not achieve a particular objective initially can get further information or practice without repeating the exact same activities.

Module development models are proliferating, and most of these models conscientiously practice what they preach. For example, Heath (n.d.) at Oregon State University and Houston et al. (1972) have developed modules on writing modules; Kapfer and Ovard (1971) have developed an Instructional Learning Package on preparing and using ILPs; and Hyder (1971) has developed a Learning Activity Package on constructing LAPs. Drumheller (1971), Frantz (1974), Hauenstein (1973),

and Silvius and Bohn (1975) have contributed to the area by producing documents explaining systems approaches to curriculum development. Arends, Masla, and Weber (1973) have produced the second edition of their CBTE module development handbook. Others such as Fardig (1975) have produced handbooks or guides for the development of modules for secondary and post-secondary technical subject matter instruction. Additionally, many of the modules which have been developed by teacher education institutions as part of their PBTE programs are available and can serve as models.

Program Development and Implementation

Houston et al. (1973) suggest that program design involves the following ten stages:

1. Specifying programmatic assumptions
2. Identifying competencies
3. Delineating objectives
4. Indicating criteria levels and assessment modes
5. Clustering and ordering objectives
6. Designing instructional strategies or modules
7. Organizing a management system
8. Testing the instructional system
9. Evaluating the instructional program
10. Refining the program

They further suggest that "the process is not linear, but systematic and recuperative with each stage and each cycle of stages contributing to a more and more refined and explicit model."

The first six steps in Houston's program design process have been generally successfully dealt with in the field, and a number of prototypes and models exist. It is in attempting to deal with the last four steps that more questions than answers have been generated. If PBTE is to involve individualized instruction, then faculty, facilities, and equipment must be made available in sufficient quantities. In some cases, this has required additional funding. In many cases, these changes have also raised the question of the possible need for differentiated staffing. If PBTE is to be, in fact, field based, then cooperative arrangements with local school districts must be made. If PBTE is performance-oriented and not time-bound, how, for example, does the institution give grades, set up courses, assess course fees, and determine faculty loads. If a PBTE program is to lead to teacher certification, then standards based on competencies must be established.

For the most part at present, PBTE programs are still in the pilot stages, and limited efforts tend to be less disruptive. However, at institutions such as the University of Nebraska, the University of Houston, Wayne State University, and Florida International University in which the PBTE program is operational, these questions are being raised and

dealt with. The need to address these concerns is evident in the steps suggested for implementing a PBTE program by Baird and Pelt (1973):

1. Get whole staff to agree
2. Obtain tentative list of competencies
3. Establish criteria for acceptable performance
4. Organize plausible and meaningful learning activities
5. Secure adequate facilities
6. Get administrative support for new and different teaching loads and responsibilities
7. All agencies involved must agree to experimentation
8. Establish record-keeping system
9. Continuously inform staff of actions and reactions to the program

Whereas Houston's program design steps seem straightforward and the tasks manageable, Baird and Pelt suggest some of the roadblocks which must be removed before PBTE can become a reality. Most developers find the first step by itself a major hurdle to accomplish.

However, none of the questions are unanswerable and none of the hurdles insurmountable. In Appendix D are program descriptions of a sampling of PBTE efforts which should provide some insight into how development and implementation questions can be answered.

Evaluation Procedures

The program design tasks listed by Houston et al. (1973) and the implementation tasks listed by Baird and Pelt (1973) both make reference to the need for assessment and evaluation systems. In traditional programs which grade students "A" to "F" on projects, examinations, and term papers, a simple grade book usually suffices. Program evaluation in traditional courses is by personal preference or, in some cases, by a student evaluation instrument. The nature of PBTE programs demands a more detailed and complex system. The program can include a large number of students working on individualized tasks selected in terms of their own needs and at which they are proceeding at their own pace. How does one monitor all these isolated activities? Furthermore, as a new program with new instructional materials, continuous feedback is needed on program and module effectiveness so refinement can occur.

Peterson's program at Minnesota involves only a limited number of students at a time. Therefore, a bar graph of students' achievement of competencies, informal feedback, and module evaluation forms are sufficient for the task. But, what happens when the program involves the entire school of education? At Brooklyn College, for example, 3,200 students were involved. One way in which this evaluation task

is being handled is by computer. At Florida International University, COMSPEC (Computer Management System for Performance-Based Curriculums) is being used for four purposes: (1) to monitor student progress, (2) to monitor group progress for course analysis purposes, (3) to collect student attitudes and opinions, and (4) to gather feedback on individual programs.

Similarly, at the University of Toledo, the University of Illinois, and Temple University, computerized monitoring systems are being used. At the University of Toledo, students must prove competency in three ways: (1) select response (multiple choice), (2) constructed response (essay), and (3) performance response (criterion checklists). Each of these response devices is an IBM processed sheet which can be easily fed into the computer system. Additionally, students evaluate instruction and this information is also fed into the computer. The computerized system allows for constant monitoring of student progress by use of printouts. If programmed to do so, the computer can perform troubleshooting tasks; i.e., provide instant feedback to apprise an instructor that a particular studeht is having a problem. And finally, the computer can allow program staff to continuously monitor the effectiveness of their instructional program and materials.

This is not to say that in order to implement a PBTE program, one must have access to a computer, and especially not to a sophisticated computer system. A simple system such as the one developed by the Department of Vocational Education at Temple University can easily be used to help monitor and record student progress through an individual module and through the total program, whether a preservice or inservice student. Given a small faculty-student ratio, or adequate differentiated staffing, computerized assistance is certainly not necessary. However, if computer hookups are available, the system's monitoring capabilities may prove ideal for a PBTE program.

There is total agreement that some type of individual student and overall progress assessment and evaluation system is needed for all PBTE programs. Presently a large variety of approaches are used; some unfortunately go little, if any, beyond the cognitive, paper and pencil approach, while others rightly emphasize the students' need to be able to do as well as know. These programs generally provide criterion checklists for peer self-evaluation in practice or simulated settings and conclude with final assessment by a competent person or persons of the student's ability to perform the specified competencies in actual school situations.

There is also general agreement that while PBTE programs, by their nature, demand a more detailed and sophisticated management system than most traditional programs, a computerized system is not needed. That is not to say, however, that

where large numbers of students and competencies are involved, a computerized management and monitoring system would not prove helpful.

RECOMMENDATIONS

Many recommendations for the guidance of the development and implementaion of PBTE programs have been made by many different persons. The 1974 AACTE Committee report entitled Achieving the Potential of Performance-Based Teacher Education: Recommendation contains a list of twenty-one well-stated recommendations. Presented here is a brief list of recommendations, offered without much further comment, which are based on our best perceptions at this point in the development of performance-based teacher education.

Recommendation #1. Very careful attention needs to be given by researchers and program developers to the methods and procedures used for developing and verifying lists of teaching competencies. Once identified, the competencies become the organizing center around which everything else is structured. Lists of teaching competencies must be periodically reviewed, reexamined, and researched to keep them current with the changes in education.

Recommendation #2. Further research is urge needed to establish cause and effect relationships between what a teacher does and what students learn.

Recommendation #3. Guidelines for the development and evaluation of high quality, field-tested, and validated PBTE instructional materials should be prepared and widely disseminated.

Recommendation #4. It is imperative that research and development efforts be undertaken to develop teacher performance assessment procedures and instruments that are both reliable and valid.

Recommendation #5. Program developers and implementers should be encouraged to plan a sound implementation strategy along realistic time lines, and to consider implementation only when adequate resources are available to meet start-up and initial operating costs.

Recommendation #6. PBTE program developers should make every effort to involve teachers, administrators, state education agency personnel, and appropriate others on a collaborative and cooperative basis in the early planning and developmental stages.

Recommendation #7. Program developers should recognize and give careful attention to the initial and continuing preparation of staff and students for their roles in PBTE programs.

Recommendation #8. While state legislatures and state departments of education should strongly encourage and support research and experimentation with PBTE programs, they should not mandate PBTE as the only approach to teacher education.

Recommendation #9. State departments of education and accrediting agencies should establish procedures whereby PBTE programs can be initiated without being delayed by inflexible standards or outdated course requirements. It should be sufficient that the educational institution is able to provide assurance of high quality standards.

Recommendation #10. College and university administrators should provide leadership and give strong support to PBTE program developers in the form of additional funding to aid beginning programs, and permit the necessary changes in institutional credit procedures, courses, tuition, etc., changes that are needed in order to encourage the establishment of optimal PBTE programs.

APPENDIX A

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APPENDIX C

Current Activities in Competency-Based Education

63

State of the Art--Current Activities in Competency-Based Education[1]

1. Seventeen states have mandated the approach as a full new or alternative system for teacher education and certification, 15 others are considering similar action. Several states plan full implementation within the next several years.

2. Approximately 500 institutions of higher education have pilot programs, about 120 have large operating programs, and 15 have institution-wide programs.

3. In 1972 a complete bibliography on the subject had 22 items; a "complete" bibliography finished in 1974 included over 800 items covering 57 different categories.

4. Pilot programs exist for almost every conceivable category of education: adult education, teacher education, education media, library personnel, nuclear radiology, dentistry, etc.

5. Thirty-seven out of 58 national professional associations surveyed in 1974 indicated involvement in competency-based education program development.

6. Six states have mandated both competency-based education and career education as major program priorities.

7. Competency-based examinations have become part of the licensing process for several occupations and professions.

8. A major national commission including 30 prominent educators and political leaders has been formed to spearhead a national research and development program in CBE--the commission is supported by private foundations and is affiliated with the Educational Testing Service of Princeton, New Jersey.

9. Thirty-one states have joined the Interstate Certification Project concerned with the mobility of educational personnel and interstate reciprocity of teaching certificates. A major focus of the 74-75 program is on transferability problems relating to competency-based education.

10. Fourteen states have formed a national consortium for the purpose of sharing information materials and personnel and for helping member states to develop management systems for the development and use of performance-based approaches to teacher education and certification.

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[1] Allen Schmieder and Margaret McNeely, Competency Based Education in Fields Other than Teacher Education (Washington, D.C.: U.S. Office of Education, Division of Educational Systems Development and the National Consortium of CBE Centers, 1975), pp. 3-6.

11. Leadership representatives from a cross section of educational constituencies--higher education, teacher professional associations, school systems, students, the basic studies, state education agencies, the Federal Government--have formed a National Committee on Performance-Based Teacher Education (sponsored by the American Association of Colleges for Teacher Education) to determine the "state of the art" of the national competency-based education movement and to support a widespread national dialogue about the progress, prospects and problems of the CBE movement.

12. Ten predominantly black colleges have formed a consortium to spearhead the development of competency-based education in small colleges.

13. The Fund for the Improvement of Post-Secondary Education supports projects which include a large number of professions and are generally directed at the identification and formulation of competency objectives, assessment for mastering of competencies, and the design and implementation of learning processes which facilitate the attainment of specified competencies.

14. 138 Teacher Corps projects involving as many institutions of higher education and local school systems give high priority to CBE programming.

15. A national occupational competency Testing Institute has been formed at the Educational Testing Service, Princeton, New Jersey.

16. HEW is supporting the development of alternative approaches to staff development for adult educators in all 10 HEW regions. Two regions (II, III) have concentrated on competency-based education, others have focused on related approaches.

17. Ohio State University's Career Education Personnel Development Project (USOE) is developing competencies for teacher education in career education.

18. There is a National Clearinghouse on PBTE at American Association of Colleges for Teacher Education, in Washington, D.C.

19. There is a National Clearinghouse on Individualized Instruction at Georgetown University, in Washington, D.C.

20. There is a National Clearinghouse for CBE in Community and Junior Colleges, University of Florida, Gainesville, Florida.

21. There is a National Clearinghouse for Action Research in CBE, at Bowling Green University, Bowling Green, Ohio.

22. There are nine Regional Competency-Based Education Centers supported by the Office of Education to develop experimental CBE models in teacher education and to provide developmental assistance and training services for those interested in installing CBE programs.

23. The American Bar Association is sponsoring a study of (Hastings Law School, San Francisco) the implications of CBE movement for training of lawyers and for education related court cases.

24. The School Library Manpower Project administers six experimental program models in competency-based library-media education.

25. Over two years the AACTE National Committee has sponsored 10 regional leadership training institutes for over 2,000 educational leaders.

26. A virtual "National Storehouse" of related materials have been developed at colleges, universities and Federally supported educational laboratory and research and development centers, e.g., 145 validated protocol packages, 650 (Gage Catalogue) validated training materials, mini courses, ITU Teachers College Units, Parson's Guided Self Analysis, Interaction Analysis Packages, IGE packages.

27. The Educational Testing Service is developing and testing taxonomy and assessment instruments for identifying and evaluating competencies acquired in domestic and volunteer activities.

28. The Council for the Advancement of Small Colleges is conducting case studies regarding cost effectiveness in a variety of CBE programs.

29. A number of skills and competency banks have been developed at several institutions of higher education and regional education laboratories.

30. Large module banks exist at approximately 10 institutions.

31. Four states have developed state-level generic competency catalogues.

32. The Antioch administered University Without Walls Program provides external degree opportunities for thousands of students through a national network of colleges and universities.

33. The Open University of the United Kingdom enrolls nearly 50,000 students from all walks of life and is the largest educational publisher in the nation.

34. New York State has developed an external degree program in the fields of nursing (AA&BA), business administration (AA) and the liberal arts (AA&BA) (heavy emphasis on life experience and military experience).

35. The Learning Resource Center in Syracuse, New York has a goal of providing competency-based external degrees to 5,000 adults in the next several years.

36. A growing list of institutions have developed CBE programs in school administration, including Alabama A&M University, Arizona State University, Bank Street College, University of Connecticut, Florida International, University of North Florida, University of Georgia, Governous State University, University of Kansas, Iowa College, St. John's University, Columbia Teacher's College, University of Houston, Weber State College, University of Utah, University of Vermont.

37. An Institute for Research and Development of Competency-Based Teacher Education Programs has been formed in the College of Education at Wayne State University.

38. The Department of Supervision and Curriculum Development at the University of Georgia is developing a competency-based center in Curriculum and Supervision. A number of other places now have CBE degree programs in supervision, including University of California at Santa Barbara, Florida International University, University of North Florida, Governous State University, Tri State College, Louisiana State University, Weber State College, and the University of Utah.

39. The American Association of School Librarian Division of the American Library Association has formed a committee to develop a competency-based certification model for school media personnel.

40. The Model Legislation Project, working in cooperation with the Lawyers Committee for Civil Rights Under the Law, made an analysis of all state regulations and laws relating to education (developed 3,000 pp. index) and as one consequence, is developing model legislation for competency-based education.

41. Six leading CBE states, working with the National Commission on PBE, are developing plans for coordinating research programs and sharing results.

42. Competency-Based Education is one of the major priority areas in a newly developing Federal Government interest in finding ways to diminish the isolation of formal education. Three Federal agencies (HEW, Commerce, Labor) have formed inter-agency task forces--including one on CBE--to work on the problem.

43. The National Institute of Education is supporting a number of significant CBE efforts--two of the most important being the California Project which is examining relationships between teaching and learning in key subject areas and the Oregon State Project which is developing CBE programs at the high school level. A large number of other NIE projects have important implications for CBE program developers.

44. Experience to date in implementing CBE programs for educational personnel development includes the:
--conceptualization and initial development of an array of CBE pilots
--implementation, evaluation, and revision of many of these pilots
--development of a wide array of instructional materials and resources
--building of relevant data banks
--development of new assessment procedures and instruments
--development of competency lists

APPENDIX D

PBTE Program Descriptions

The first nine program descriptions which follow represent a sampling of five vocational and four general education PBTE research and developmental efforts. These nine were selected from the many efforts underway because they (1) exemplify most of the characteristics of a total PBTE program; (2) are completely or nearly operational; and (3) have documented their efforts in the literature.

The other brief descriptions which follow (pp. 95-100) represent significant other PBTE projects or activities in vocational education which are of a regional, state, or institutional nature.

THE CENTER FOR VOCATIONAL EDUCATION.[2]

1967-1976

Personnel Responsible: Cotrell, Finch, Hamilton, and others

Research Phase

I. Conduct Research Phase
   A. Identified competencies needed by teachers of conventional vocational programs
      1. Occupational analysis of each service area
      2. Interviews with educators at various levels
      3. Introspection
      4. Competencies (237) rated by educators at various levels
         a. Competencies common across service areas (94% common)
         b. Competencies unique to single service area (6% unique)
         c. Importance of competencies (226 important)
      5. Critical Incidents Survey: 30 additional competencies identified (256 total)
   B. Identified competencies needed by teacher-coordinators of cooperative programs
      1. Occupational analysis of each service area
      2. Interviews
      3. Introspection
      4. Competencies (385) rated by teacher-coordinators
         a. Competencies common across service areas (92% common)
         b. Competencies unique to single service area (8% unique)
         c. Importance of competencies (all important)
      5. Meeting of teacher-coordinators: 384 competencies confirmed
   C. Findings of Phases I and II merged (390 competencies)
   D. Refinement by project staff (384 competencies)
   E. 384 competencies clustered into 10 categories
      a. Program Planning, Development, and Evaluation
      b. Instructional Planning
      c. Instructional Execution
      d. Instructional Evaluation
      e. Management
      f. Guidance
      g. School-Community Relations
      h. Student Vocational Organization
      i. Professional Role and Development
      j. Coordination
   F. Measurable criteria delineated for each competency by Center staff
   G. Competencies clustered into 123 modules (learning packages)

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[2]See page 77 for graphic overview of program phases and steps.

Development and Testing Phase

II. Develop Module Prototype
   A. Two sites: University of Missouri at Columbia; Oregon State University at Corvallis
      1. Site Coordinator from The Center at each site
      2. Writing teams composed of teacher educators from each of the vocational service areas at each of the two sites
   B. Module development process
      1. Each site contracted to write specific modules of their choice
      2. Writing team developed module
      3. Module reviewed at developing site, at other site, and at The Center
      4. Three reviews synopsized
      5. Center staff made revision decisions based on all reviews
      6. Module revised at site or by Center staff (118 brown cover modules resulted)

III. Conduct Preliminary Testing

   A. Three sites: University of Missouri at Columbia; Oregon State University at Corvallis; and Temple University in Philadelphia
      1. Feedback gathered from:
         a. Teacher educators testing modules
         b. Preservice teachers using modules
         c. Inservice teachers using modules
         d. All service areas
   B. Psychometric refinement by California Testing Bureau: McGraw-Hill
   C. Categories of modules reviewed by consultants

IV. Revise Modules
   A. Review teams (teacher educators, consultants, editors) at Center revise modules
      1. Team members review module and all revision data independently
      2. Team members meet to discuss revision needed
      3. Module revisor makes revisions
      4. Team reviews module and approves or suggests further revision (Steps 3 and 4 are repeated until module is approved)
      5. Editor checks module for format, accuracy and grammar
      6. Revision coordinator gives module a content review
      7. Final typing
      8. Typed module is checked for accuracy by editor
      9. Module is pasted up
      10. Final quality control check is made
   B. One hundred modules revised for advanced testing

V. Conduct Advanced Testing
   A. Eight sites:
      1. Florida State University, Tallahassee
      2. Colorado State University, Fort Collins

3. University of Northern Colorado, Greeley
4. Temple University, Philadelphia
5. Rutgers University, New Brunswick
6. Holland College, Prince Edward Island, Canada
7. Ferris State, Big Rapids, Michigan
8. University of Michigan, Flint

B. Ten National Institute for PBTE sites (1975-1976)
1. University of Vermont, Burlington
2. State University College at Buffalo
3. University of Pittsburgh
4. University of Tennessee, Knoxville
5. University of Minnesota, Minneapolis
6. Oklahoma State University, Stillwater
7. University of Nebraska, Lincoln
8. Utah State University, Logan
9. University of Arizona, Tucson
10. Central Washington State College, Ellensburg

C. Feedback gathered
1. Pre/Post Estimate of Performance
2. Resource Person Feedback Booklet
3. Teacher Trainee Feedback Booklet
4. Teacher Performance Assessment Form

VI. Refine Modules for Publication by AAVIM in Athens, Georgia

Dissemination and Implementation Phase

VII. Disseminate Materials/Assist with Implementation

A. Twenty-five National Institute for PBTE sites (1976-77)
1. Appalachian State University, Boone, North Carolina
2. Brigham Young University, Provo, Utah
3. Central Connecticut State College, New Britain
4. Central State University, Edmond, Oklahoma
5. Cullman County Area Vocational Center, Cullman, Alabama
6. Eastern New Mexico University, Portales
7. Federated Universities of North Texas Area, Richardson
8. Indiana University, Bloomington
9. Iowa State University, Ames
10. Michigan State University, East Lansing
11. New York Institute of Technology, Old Westbury
12. Ohio State University, Columbus
13. Pennsylvania State University, University Park
14. Purdue University, West Lafayette, Indiana
15. State University College at Utica/Rome, Utica, New York
16. Suburban Hennepin Technical Center, Eden Prairie, Minnesota
17. University of Kentucky, Lexington
18. University of Louisville, Louisville, Kentucky
19. University of Minnesota-Duluth
20. University of New Hampshire, Durham
21. University of Rhode Island, Kingston
22. University of South Dakota, Springfield
23. Virginia Polytechnical Institute, Blacksburg

24. Western Michigan University, Kalamazoo
25. Westfield State College, Westfield, Massachusetts

B. Conduct National, Regional, and Statewide PBTE Workshops

Note: Initial Center PBTE research (1967-1972) was supported by the U.S. Office of Education; most curriculum development and some field testing (1972-1976) was supported by the National Institute of Education; other field testing and training and dissemination activities (1975-1976) were supported by the U.S. Office of Education (EPDA) or self-sponsored.

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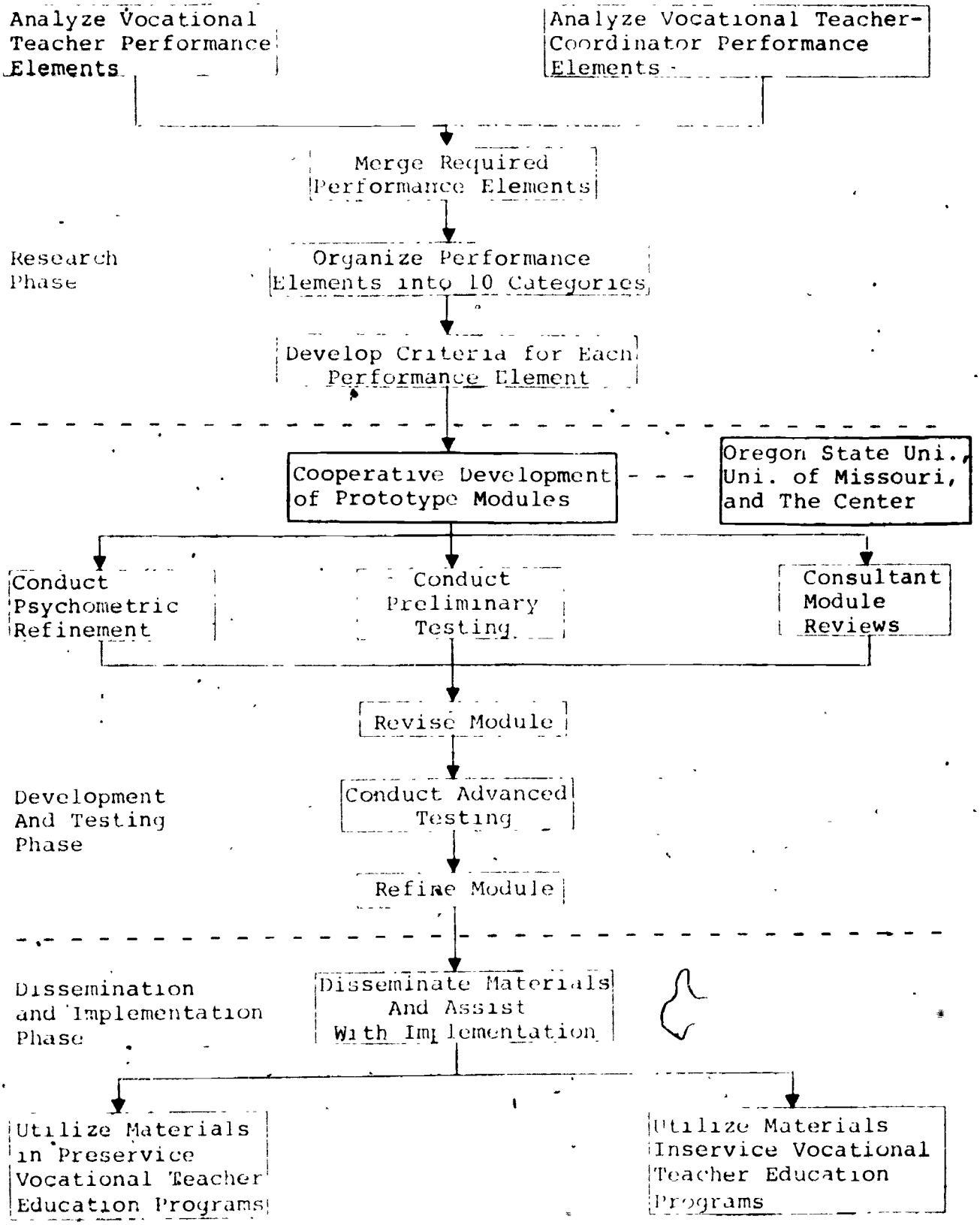
Norton, Robert E. and Huang, May W. Student Guide to Using Performance-Based Teacher Education Materials. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, August, 1975.

PERFORMANCE-BASED VOCATIONAL TEACHER EDUCATION CURRICULA



ILLINOIS STATE UNIVERSITY AT NORMAL

Personnel Responsible: Pierce, Edwards, Waimon, Lorber, Zeller, Fisher, and Franks

Program: Professional Education Sequence (PES)--1971

Level: Preservice Secondary Teachers

Competencies: Analyzed teacher role in terms of specified competencies; competencies are written in behavioral terms and then specified as objectives with explicit assessment posibilities.

Modules: Developed from competencies using systems approach based on Kibler's General Model of Instruction. Each competency is the subject of a separate learning package. Packages are brief and structured as follows:

Rationale (purpose of package and how it fits teacher role)
Behavioral Objective (behavior, conditions, required proficiency level)
Preassessment (essays to allow student to determine present level)
Concept and Questions to be Answered (study guide)
Required Learning Activities (multiple paths; sequenced)
Optional Learning Activities (increased practice; broader view)
Description of Evaluation (demonstration of skills)

Program Description: Each student is given a PES Guide containing all packages. Students plan portions of their own learning sequence. Each package has been weighted by merit according to the approximate number of class hours needed. Seventy percent of the merits are required packages which provide all competencies needed by a pre-service teacher. Thirty percent of the merits are elective packages which can be completed when the student finishes the required work. Work is self-paced and self-directed. Students can demonstrate competency any time they wish. There are no "grades" or "incompletes" given, when student proves competency, he/she gets credit for that module. The evaluation devices used are criterion-referenced.

The faculty is composed of specialists in methods as well as secondary reading. Approximately 1300-1800 students are in the program. Each student can select any advisor for one-to-one planning and consultation.

Given a specific problem, a student can go the area expert to receive specialized assistance. A series of seminars with five to ten participants is held to cover higher order skills. Students work with packages, do micro-teaching, complete eighteen hours of observation and assisting and at least two hours of teaching in the campus laboratory school, and then student teach.

Facilities and Equipment:

Ampex Corporation Random Access Information Retrieval System
Study carrels and media equipment and materials
Testing center open 45 hours per week including evening hours
Computerized record-keeping system to monitor competencies attained by each student.
Micro-teaching stations equipped with cassette videotape recorders, monitors, and cameras.

Additional Information:

Edwards, Clifford H. "A Performance-Based Teacher Education Program." Peabody Journal of Education. 51 (April 1974): 224-28.

Lorber, Michael A. Computers Help 2,000 Students Self-Pace Their Learning. Normal, IL: Illinois State University, College of Education, 1973.

Lorber, Michael A. "Increased Learning Freedom Via Competencies." Paper presented at the Conference on Computers in the Undergraduate Curricula, Claremont, California, 1973. ED 081 229.

ILLINOIS STATE UNIVERSITY AT NORMAL

Personnel Responsible: Loepp, Johnson, Hackett, James, Pierce, and Wray

Program: Preservice Occupational Program (POP)--1973

Level: Preservice Vocational Teachers

Competencies: Existing competency lists were pooled (approximately eight sources used including Cotrell) yielding 2,000 competencies. Competencies were sorted into 11 conceptualized areas (e.g., Program Planning) and then translated into 62 performance objectives with specified conditions and criterion levels.

Modules: POP Kits

During Phase II (1974-75) POP Kits were developed for 28 of the 62 competencies. Eleven of those Kits were pilot tested at eight public universities in Illinois and subsequently revised.

During Phase III (1975-76) ten additional POP Kits were developed. All 28 Phase II Kits were pilot tested and subsequently revised.

According to its developers, POP Kits are mostly self-contained, attractively illustrated, and arranged for efficient use by students. The instructor is made an integral part of each Kit. The Kits are structured in the following manner:

Rationale (why the material in the Kit is important)
Performance Objectives (the performance to be demonstrated by the student)
Preassessment (self-test to help the student decide if he or she should complete any learning activities or proceed directly to the evaluation)
Learning Activities (minimum of three learning modes; e.g., readings, slide/tapes, videotapes, transparencies, simulations, etc.)
Evaluation (techniques to allow the instructor to evaluate the student's performance)

These materials are available on loan from the East-Central Curriculum Management Center, Illinois Office of Education, Adult, Vocational and Technical Education, 100 North First Street, Springfield, Illinois 62777.

Models: Staff have developed the POP Instructional Model (PIM) and an Implementation Model.

Additional Information:

Pre-Service Occupational Program, POP Kit 0.1: A POP Kit on the Pre-Service Occupational Program. Second Edition. Springfield, IL: Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education, Professional and Curriculum Development Unit, n.d.

TEMPLE UNIVERSITY AT PHILADELPHIA

Personnel Responsible: Cotrell, Adamsky

Program: VITAL (Vocational Intern Teaching Applied Learning)--1973

Level: Inservice vocational teachers without previous vocational teacher preparation

Competencies: Since Temple uses the modules developed at The Center for Vocational Education in Columbus, the competencies are those identified in the research directed by Cotrell while he was at The Center. An occupational analysis (introspection, and interviewing of master teachers and vocational teacher educators) in Phase I of the study resulted in a preliminary list of 237 performance requirements of teachers in conventional vocational programs. In Phase II, a similar process was used to identify the performance requirements of teacher-coordinators of cooperative programs. The findings of Phases I and II were merged, resulting in 384 performance elements that were clustered into ten professional categories. Finally, a set of performance-oriented general objectives specifying the competencies and the general criteria for evaluating a teacher's performance of the stated activity was developed.

Modules: There are 100 Center modules covering the 384 competencies. Temple uses modules covering 76 competencies in the areas of instructional planning, instructional execution, instructional evaluation, and shop organization and planning. Modules that were originally tested relied on outside references, but the revised modules are mostly self-contained and structured as follows:

Title Page (includes identification of performance elements
Prerequisites
Introduction
Module Structure and Use (includes explanation of module organization, objectives, procedures for use, resources needed, and terminology used)
Learning Experiences (includes an overview; learning activities such as reading information sheets, reacting to case studies, planning, and conducting role-plays; and feedback activities)

The final learning experience always requires the student to demonstrate his or her competency in an actual school situation. Resource persons (field or resident) use an objective criterion-referenced evaluation instrument called a "Teacher Performance Assessment Form" to assess the student's level of performance. The learning experiences always provide the needed background information (cognition), opportunities to apply that information in practice situations (simulation), and final assessment of performance in an actual school situation.

Program Description: The program incorporates the concepts of field-based teacher education, performance-based teacher education, criterion-referenced evaluation, individualized learning, self-pacing, self-evaluation, differentiated staffing and assessment in actual school situations. The interns are considered a part of the staff since they are each ultimately responsible for their own learning. A resident resource person (master teacher) and a field resource person (university staff member) work with the interns. Their efforts are coordinated by a senior teacher educator. A Council of Educators consisting of an appointed representative of local administration, a teacher education, and an elected local teacher become involved when a certification decision must be made. The program basically operates as follows: (1) resource person and intern determine the intern's needs and select a module accordingly, (2) the intern completes module (in part or in total), again according to personal needs, (3) when the intern believes that the stated criteria for performance can be met, the final learning experience is attempted and self-evaluation is performed, (4) when self-evaluation indicates successful performance, evidence of this is presented to a resource person, (5) intern and resource person confer to determine if the evidence (usually a videotape of the presentation; in some few cases, written evidence) indicates adequate performance, and (6) when evidence of the intern's overall teaching competency has been accumulated, it is presented to the Council of Educators for a decision regarding provisional certification. The program has been expanded on a pilot basis to include preservice teachers. Currently, pilot programs are planned to include similar activities for those seeking certification as vocational supervisors and directors.

Management: VITAL-MIS, a computerized management information system has been developed to assist the program coordinator and field resource persons in managing the data needed in carrying out their program responsibilities. VITAL-MIS became completely operational in the fall of 1975. Stored in memory is an up-to-date description of the personal and demographic characteristics of all interns and the staff members serving them, as well as a complete history of staff and intern activity since becoming active in the program.

This information is provided to staff members through reports issued at specific intervals. These reports guide much of the staff's activity in serving the interns. The information stored in VITAL-MIS is also used in combination with that obtained through the yearly evaluations of the program. The Total Information Base is currently being used to determine if it is possible to predict an intern's success in the classroom based on his or her personal and situational characteristics as well as the service received while in Program VITAL.

Additional Information:

Adamsky, Richard and Calvin C. Cotrell. "Program VITAL: A Futuristic Inservice Model for Vocational Teacher Education." Journal of Industrial Teacher Education. 12 (Summer 1975): 39-46

UNIVERSITY OF HOUSTON

Personnel Reponsible: Hollis, Felder, Weber, Howsam, Houston

Program: General Education Preservice--1968

Level: Elementary and Secondary Teachers

Competencies: Started with five propositions about what a teacher's role is: (1) teacher is a liberally educated person with a broad background in his teaching field; (2) teacher reflects in his actions that he is a student of human behavior; (3) teacher makes decisions on a rational basis; (4) teacher employs a wide variety of appropriate communication and instructional strategies; and (5) teacher exhibits behavior which reflects professionalism. From these five propositions, 16 broad competencies were generated. These competencies were, in turn, broken down into sub-competencies. Explicit criteria are specified for assessing these competencies.

Modules: Activities were sequenced using Frances Fuller's Concerns Model; i.e., a prospective teacher goes through a describable series of concerns as follows: (1) concern about why he is in teacher education and about teaching tasks and pupil needs; (2) concern about himself as a teacher; and (3) concern about his impact on students. Using the model, the following sequence of modules was developed: (1) an employment module; (2) a multicultural module; (3) a module on instructional objectives; (4) modules on teaching skills (e.g., set induction); and (5) Optional Affective Modules (e.g., listening and responding).

Program Description: The program is individualized. Students start with a series of Career Decision Experiences to see if teaching is the appropriate career for them and at what level they should teach. Students then move through a sequence of acquiring single skills, integrating skills, micro-teaching, tutoring, and interning. Students' achievement of competencies is not time-bound. Students are held accountable for the demonstration of competencies, and given a number of options for acquiring the skills. Students can participate in seminars, large and small-group discussions, micro-teaching sessions with peers critiquing performance, observations, and independent study. When a student is ready to be assessed, he/she meets with the supervisor. They decide cooperatively which competencies will be assessed during the observation. During the observation, data is gathered specifically on the competencies agreed upon and feedback is given based on that data.

Facilities and Equipment: A modern facility supports the program's individualized nature. The first floor contains a large round auditorium (KIVA) for large-group meetings and small counseling rooms with one-way glass. The second floor is an

open space environment. On the third floor there is a Learning Resource Center containing carrels, hexagonal tables, media, and a variety of equipment. The fourth floor has seminar rooms. A set of faculty-student mailboxes serves to keep the communication lines open.

Additional Information:

Bowles, F. Douglas. "Competency-Based Teacher Education: The Houston Story." Educational Leadership. 30 (March 1973): 510-12.

Houston, W. Robert and Howard L. Jones. Three Views of Competency-Based Teacher Education: II, University of Houston. Fastback 49. Bloomington, IN: Phi Delta Kappa Educational Foundation, 1974.

School Based Teacher Education Project: Report of First Year Activities, 1975-1976. Houston, TX: University of Houston, 1976.

Thompson, Bruce. An Analysis of CBE. Houston, TX: University of Houston, College of Education, 1974. ED 098 206.

UNIVERSITY OF MINNESOTA

Personnel Responsible: Peterson

Program: Pre and Inservice Teaching Methods for Agricultural Education Teachers--1968 (Revised 1972 and 1975)

Level: Secondary Agricultural Education Teachers

Competencies: The program consists of a prepared list of competencies that focus on basic problem-solving teaching techniques. The competencies derived were compared to those identified by Cotrell for validation. Thirty subject-matter areas, primarily in the planning, execution, and evaluation of instruction, were identified and confirmed as being most important for beginning agricultural teachers. Eighty-one objectives provide the framework for the instruction, and the thirty areas are sequenced from simple to complex.

Modules: Thirty subject-matter areas are formed into thirty individualized teaching modules called Minn Mods. The 30 modules are grouped into eight areas (e.g., "Evaluating," "Group Teaching Methods"). The modules are essentially self-contained and structured as follows:

Rationale
Objectives
Preassessment (essay and objective questions)
Learning Activities (readings, audiotapes, videotapes, etc.)
Evaluation (evaluation is based on the completion of learning activities. Each module may involve written tasks or actual performances. The learning activities are evaluated on the basis of quality of performance (satisfactory or unsatisfactory). Evaluation consists of a checklist for each learning activity. A micro-teaching performance is required in 10 of the 29 modules. A key feature of the system is that each module has an audiotaped discussion which forms the basis for completing the learning activities. Modules requiring a teaching performance have a videotaped model teaching situation.)

Program Description: Students must complete the 29 modules within the limits of 10 weeks, preferably immediately before student teaching (which is the thirtieth "module"). The course carries 5 credits; modules are either completed satisfactorily (credit) or unsatisfactorily (no credit); students contract for a "C" (credit for 23 modules), a "B" (credit for 29 modules completed satisfactorily) or an "A" (credit for 29 modules completed with a good to excellent rating). Student progress through modules is kept on a simple bar graph, posted in the independent study room. Students proceed at

their own pace through the modules, making appointments with the instructor as required to micro-teach or to participate in small-group discussion. Large-group discussions are held one hour a day for the first week and once a week for the remainder of the quarter. The course must be successfully completed before student teaching.

Facilities and Equipment: A well-stocked learning resource center contains specially prepared materials for each module (e.g., files of modules and audiotapes, file boxes of references, videotaped demonstrations, high school texts, workbooks, and other resources). There are study tables, lounge chairs, and study carrels equipped with audiovisual equipment. Facilities are also available for micro-teaching sessions.

Additional Information:

Peterson, Roland L. "Competency-Based Vocational Teacher Education." Paper presented as a Graduate School Lecture to the Agricultural Education Department, The Ohio State University, Columbus, Ohio, 1975.

UNIVERSITY OF NEBRASKA

Personnel Responsible: Kelley, Andrews

Program: NUSTEP (Nebraska U versity Secondary Teacher Education)--Initiated 1968; Operati al 1969

Level: Preservice sec eachers of English, music, science, social studies, b education, speech, modern foreign languages, and math.

Competencies: NUSTEP staff formulated a list of objectives based on their assumptions as to the skills and knowledges needed by teachers.

Modules: Learning Tasks Booklets contain the modules for the program. There is a Basic Learning Tasks Booklet containing the 11 required modules, and seven Learning Tasks Booklets for specific disciplines (e.g., English Education Learning Tasks, and Business Teacher Education Learning Tasks) each containing approximately 10 modules designed to develop basic teaching skills in the disciplines and 10 additional modules designed to provide additional depth and breadth to the student's use of educational psychology and secondary education. Materials are self-instructional; they include most of the reading materials necessary for a basic instruction to the subject. The module format is structured as follows:

Preface (Learning Task Description)

--Problem Area
--Performance Objectives
--Prerequisites

Learning Activities:

--Readings (information sheets and outside resources)
--Activities for classroom practice
--Activities for practice in field situations
--Activities for evaluation of student performance
--Information Sheets
--Performance Criteria

Program Description: The program is founded on eight broad goals of the department which specify the type of teachers the program should produce. Students enroll in NUSTEP during their junior year or first semester of their senior year. The NUSTEP program lasts for one semester and carries nine academic credit hours. NUSTEP represents half the student's course load (20 hours a week) during that semester. The semester following NUSTEP is usually spent student teaching. Instruction is team-planned and often team taught. Each student is assigned a proctor (staff member) to work with. The student, his proctor and his cooperating teacher work together to plan the student's activities, half of which are lectures, lab and self-instruction, and half of which are

field experiences. Emphasis is on achieving the performance objectives and demonstrating competence in micro-teaching or student teaching settings. The program is success-based; a student who is unsuccessful receives an incomplete and can recycle until his or her performance is successful.

Additional Information:

Kelley, Edgar A. Three Views of Competency-Based Teacher Education: III, University of Nebraska. Fastback 50. Bloomington, IN: Phi Delta Kappa Educational Foundation, 1974.

Kelley, Edgar A. and John W. Zimner. NUSTEP, A Performance-Based Teacher Education Program: The First Four Years, 1969-1973. Lincoln, NE: University of Nebraska, Teachers College, 1973.

Sybouts, Ward. "Performance-Based Teacher Education: Does It Make a Difference?" Phi Delta Kappan. 54 (January 1973): 303-304.

WAYNE STATE UNIVERSITY, DETROIT, MICHIGAN

Personnel Responsible: Cook, Richey

Program: VAE (Vocational and Applied Arts Education) Pre-Certification Teacher Education Program--1971

Level: Preservice Vocational and Industrial Arts Teachers

Competencies: Efforts started with a review of the literature, including Cotrell's 384 competencies. They defined "competency" operationally and had faculty members review the competencies. Faculty members added 20 items and deleted what they considered to be inservice and coordination competencies. Several thousand intern teachers, vocational teachers, non-vocational teachers, administrators, school board members, representatives from business and industry, high school and community college students, and graduates of vocational programs then rated each competency. As a result, 75 competencies grouped into seven categories were identified. After a year, this was reduced to 50 competencies. The competencies are the skills, knowledge, or judgments that students need to demonstrate at a predetermined proficiency level before certification. Each competency contains a number of objectives. A single objective may show up under several competencies. Course objectives cut across competencies. Competencies are general and program-related; objectives are specific and course-related.

Modules: Called Wayne Kits, the modules use a format borrowed from Wilkits (Weber State), Unipacs (I/D/E/A), HELP (Home Economics Learning Packages) and ILP (Individualized Learning Packages). A systems approach is used to design curricula. Kits contain a variety of experiences (media, dicussions, and micro-teaching).

Program Description: Students start by assessing their needs to determine present skills and training requirements. An exit test and prerequisite skills test are used in the needs assessment process. The program is presented in phases: (1) Introduction to Education (teaching vocational and career education programs); (2) Foundations (theory and practice of teaching and learning); (3) Methods of Teaching (specialization area); (4) Intern Teaching; (5) Intern Teaching Seminar (philosophy of education); and (6) Field Experience. The delivery system used by a professor is not specified: however, there is agreement that competency need not be attained through formal courses. Lecture, small-group discussion, micro-teaching, field experiences, and self-pacing through Wayne Kits are all used. Evaluation involves exit tests to determine mastery and later follow-up of on-the-job demonstration of skills. A retrieval system for Wayne Kits has been developed.

Model: Staff members have developed both a systems model for curriculum development and an accountability model specifying the responsibilities of persons involved in the program.

Additional Information:

Cook, Fred S. et al. A Working Model of a Competency-Based Teacher Education System. Detroit, MI: Wayne State University, Department of Vocational and Applied Arts, 1973. ED 077 870.

Department of Vocational and Applied Arts. Competencies and Performance Objectives. Competency Based Teacher Education Series: No. 1. Detroit, MI: Wayne State University, Department of Vocational and Applied Arts, 1972.

Department of Vocational and Applied Arts. Two VAE System Models. Competency Based Teacher Education Series: No. 2. Detroit, MI: Wayne State University, Department of Vocational and Applied Arts, 1972.

Department of Vocational and Applied Arts. Competencies and Performance Objectives. Competency Based Teacher Education Series: No. 1. Detroit, MI: Wayne State University, Department of Vocational and Applied Arts, 1973.

LaChapelle, Bette, ed. The Intern Teaching Handbook. Detroit, MI: Wayne State University, 1975.

Neuhauser, Charlotte. The Design and Implementation of a Management Information System to Facilitate the Functioning of a CBTE Program. Detroit, MI: Wayne State University, Department of Vocational and Applied Arts, 1974. ED 089 673.

Neuhauser, Charlotte L. Management Information System. Competency Based Teacher Education Series: No. 4. Detroit, MI: Wayne State University, Vocational and Applied Arts Education, 1974.

Richey, Rita C. Competency and Performance Objective Hierarchies. Competency Based Teacher Education Series: No. 5. Detroit, MI: Wayne State University, Vocational and Applied Arts Education, 1974.

Richey, Rita C. Definition of Selected Terms Related to the VAE Competency-Based Teacher Education Programs. Detroit, MI: Wayne State University, College of Education, 1974.

Richey, Rita C. Designing a CBTE Instructional System: A VAE Case History. Competency Based Teacher Education Series: No. 3. Detroit, MI: Wayne State University, Vocational and Applied Arts Education, 1974.

WEBER STATE AT OGDEN, UTAH

Personnel Responsible: Parkinson

Program: Individualized Performance-Based Teacher Education Program--Initiated Planning 1966; Operational 1970

Level: Preservice elementary, secondary, and early childhood teachers

Competencies: Teacher educators, teachers, administrators, and education students defined competencies needed for successful teaching, translated competencies into instructional objectives, and specified learning experiences which could help students meet those objectives. Available research was also utilized.

Modules: Each Wilkit (Weber Individualized Learning Kit) deals with an important teacher education concept; some contain skills generic to both elementary and secondary teachers, others contain skills specific to elementary or secondary teachers. The module format is structured as follows:

Title/Time Needed/Materials/Advance Arrangements
Introduction/Content
Preassessment
Instructional Objectives
Learning Experiences
Self-Evaluation (answers may be discussed with professor)
Proficiency Assessment (performance evaluation; written exam; planning activity; micro-teaching)

Each module includes learning experiences such as seminars, peer sessions, individual conferences, laboratory experiences, faculty conferences, and directed readings.

Program Description: Modules are organized within course blocks. Students' work is self-paced, with some options provided as to the activities and methodologies in which they will participate. No letter grades are given; grading is credit/no credit. If a student fails to complete modules, then NC is given and the student reregisters for the course. The program is built on a philosophic framework including 12 statements as to what the Weber State faculty believes teacher preparation should embody. In keeping with one of these statements, "teacher preparation should be based on the skills of effective human interaction," students participate in an interaction/human relations training laboratory for 40 hours at the beginning of their professional training.

Additional Information:

Baron, Clark. "Another Response from a Weber State Student." In John G. Merrow, II. Politics of Competence: A Review of Competency Based Teacher Education (with Nine Reactions). Washington, D.C.: U.S. Department of Health, Education, and Welfare, National Institute of Education, Basic Skills Program on Teaching, 1975. Pp. 45-48.

Burke, Caseel. The Individualized Competency-Based System of Teacher Education at Weber State College. PBTE Series: No. 2. Washington, D.C.: American Association of Colleges for Teacher Education, 1972.

Burke, C. D. "The Structure and Substance of the WILKIT Instructional Module." Educational Technology. 12 (September 1972): 41-46.

Burke, Caseel D. "How Fare the Graduates of a Competency-Based Teacher Education System?" Journal of the Student Personnel Associations for Teacher Education. 13 (December 1974): 71-77.

Parker, Reese. "Weber State College Evaluates IPTE after Three Years. Phi Delta Kappan. 55 (January 1974): 320-24.

Shupe, Sandra. "Response from a Weber State Student." In John G. Merrow, II. Politics of Competence: A Review of Competency Based Teacher Education (with Nine Reactions). Washington, D.C.: U.S. Department of Health, Education, and Welfare, National Institute of Education, Basic Skills Program on Teaching, 1975. Pp. 40-45.

FLORIDA INTERNATIONAL UNIVERSITY

Personnel Responsible: Hauenstein and others

The Division of Vocational and Adult Education at Florida International University has established the following PBTE program areas: Industrial Arts Education, Vocational Industrial Education, Technical Education, Home Economics Education, Adult Education, and Administration and Supervision. Efforts were begun in fall 1972. All courses in each program are of the modular format. The modules contain goals, tasks, enablers, instructional resources, and criterion levels of expected performance. Some components of the undergraduate and graduate programs are field-based.

FLORIDA STATE UNIVERSITY

Personnel Responsible: Andreyka and Blank

Project ACTIVE (Attaining Competence for Teaching in Vocational Education) began in 1975 with the following purposes: (1) to identify and prioritize professional competencies important to vocational teachers, (2) to identify specific assessment criteria that may be used to determine if competencies have been attained, (3) to develop performance-based, self-paced learning packages, (4) to develop evaluation instruments and strategies that will allow for objective assessment of competency mastery while the participant is performing in an actual school situation, and (5) to fully implement this competency-based program in the traditional university setting.

Project ACTIVE is designed to meet the professional needs of the following groups at both the preservice and inservice levels: Business Education, Cooperative Education, Distributive Education, Industrial Arts Education, Technical Education, and Trade and Industrial Education. While many aspects of the project are still in the developmental stage, the Trade and Industrial Education component is scheduled for implementation in fall 1976. A state advisory committee was established, and practicing professionals in Florida were polled to identify the competencies most important to Trade and Industrial teachers. A pilot program based upon the 65 competencies identified has been initiated. Student progress in the program will be monitored by the use of a conventional transcript as well as a competency-based transcript which lists each competency attained, date completed, grade earned, and the name of the faculty resource person who helped the participant achieve competency.

Florida State University has also participated in the advanced testing of The Center for Vocational Education's 100 PBTE modules.

HOLLAND COLLEGE, P.E.I., CANADA

Personnel Responsible: Coffin and Glendenning

Holland College, a post-secondary institution located at Charlottetown, Prince Edward Island, Canada, has established a completely competency-based staff development program of in-service education for its own occupational education faculty. In 1971, a DACUM committee composed of members of the faculty and administration developed an "instructor profile chart" of the competencies needed by their instructors. DACUM is an approach to task analysis and curriculum development whereby a committee of workers from the occupation being analyzed participate in a modified brainstorming type of workshop to (1) identify the major areas of responsibility of workers in the occupation; and then (2) further specify or delineate the tasks that workers must perform in each major area. The Holland College instructor profile chart was updated in June of 1976 and now includes 258 specific competencies for post-secondary instructors, grouped into 11 broad categories. Instructors, over a given period of time, are expected to demonstrate their competency on a specified minimum number of teaching skills. Ratings on the instructor profile chart are based on industrial performance standards. A staff development resource center has been established where a large assortment of printed and multi-media materials, as well as a staff development specialist, are available for instructors.

Holland College also participated in the advanced testing of The Center for Vocational Education's PBTE modules during the period of May 1975 to August 1976.

KENT STATE UNIVERSITY

Personnel Responsible: Albright and Pinchak

As part of a 1974-1975 EPDA project entitled "Identifying Competencies Necessary for Teachers of Disadvantaged and Handicapped Youth," the competencies deemed necessary for Ohio's Occupational Work Adjustment (OWA), Occupational Work Experience (OWE), and Special Needs teachers were identified. Teachers, teacher educators, and supervisors were asked to react on a five-point scale to 112 competencies organized into the six major areas of program management, curriculum, classroom management, coordination, remediation, and counseling. Teacher and supervisor responses indicated that all 112 competencies were perceived as necessary and valid. Teacher responses suggested that the three program areas are more alike than different in terms of the teacher competencies involved.

TEXAS A & M UNIVERSITY

Personnel Responsible: Herring

A statewide project involving nine teacher education institutions cooperated in a 1975-1976 project entitled the "Identification and Validation of Competencies for Teacher Education in Agriculture." Specific objectives of the project included: (1) to identify the competencies required for entry into the professional role of a vocational agriculture teacher, (2) to verify the competencies identified, and (3) to initiate procedures for incorporating the verified competencies into the teacher education programs of the nine universities providing certification programs for vocational agriculture teachers in Texas. A survey instrument was developed by a state advisory committee of teacher educators and state supervisors. The instrument, containing 135 items, was responded to by 311 supervising teachers, 22 teacher educators, and 14 state supervisory personnel. A high level of agreement was indicated on nearly all competencies by all three groups. At a working conference of teacher educators and state staff, priorities were established by consensus for both preservice and inservice programs. A core of essential competencies has been identified and verified, and a beginning made toward incorporating the competencies into the teacher education programs of each of the nine cooperating universities.

UNIVERSITY OF ARIZONA AT TUCSON

Personnel Responsible: McCormick

A professional competency-based teacher education program in agricultural education was initiated by the Department of Agricultural Education in the College of Agriculture during the 1968-1969 academic year. All undergraduate professional education courses (20 semester hours) offered by the department are integrated into the "professional competency core" concept. This core consists of 92 professional competencies essential for beginning teachers of agriculture. The staff feels the "competency approach" to preparing teachers of agriculture in Arizona has been highly effective as evidenced by performance of graduates in the field. From a curriculum standpoint, the competency approach has helped (1) to eliminate gaps in the instructional program, and (2) to reduce overlapping of course content to a minimum. It is "strongly believed by staff, teachers, school administrators, and state department of education personnel that the approach has improved the instructional program in agricultural education." In an attempt to keep the professional preparation program up-to-date, individual teacher assessments of professional competency are made at regular intervals; namely, 6 months, 12 months, and 24 months after initial employment.

UNIVERSITY OF MAINE AT PORTLAND-GORHAM

Personnel Responsible: Berry, Vail

An EPDA-funded project for USOE Region I entitled "Competency-Based Teacher Education for Vocational Educators of New England" was initiated in September 1975. One of the major goals of this project was to identify and prioritize two groups of teacher competencies/modules. The first group of competencies/modules was to consist of those competencies which should be included in a preservice vocational teacher education program. The second group was to consist of only those competencies needed by a tradesman entering teaching without any formal teacher training; a "Survival Kit" which would assist him/her while he/she acquired other teaching competencies through an inservice program. To obtain the desired information, the opinions of New England vocational teacher educators were sought through use of a two-phased Delphi Technique identification process. The questionnaire developed listed the one hundred vocational teacher, competency-based modules developed and field tested by The Center for Vocational Education at The Ohio State University. Respondents were asked to make a judgment about each competency/module for each of the two categories: preservice program, and survival kit program. The judgment requested for each category was whether the competency (1) should be required, (2) is desirable, or (3) is not needed for that program. Data was analyzed to indicate (1) the ranking of the importance of the various competencies for a preservice program, and (2) the ranking of the importance of the various modules for the tradesman's survival kit program. Fifty-eight of the competencies were recommended for inclusion in a preservice program and 40 competencies were recommended for inclusion in the tradesman's program. In August of 1976, the University of Maine launched a statewide vocational adult teacher education inservice program using the findings of the regional study as one important basis for program development.

UNIVERSITY OF NEBRASKA AT LINCOLN

Personnel Responsible: Crain, Burlow, Eggland, Hansen, Cromer

An EPDA-sponsored training project entitled "Inservice Activity to Facilitate the Implementation of Competency-Based Teacher Education Activities" is being carried out for USOE Region VII by the Department of Vocational-Technical Education at the University of Nebraska at Lincoln. The inservice activity being conducted during the period July 1976 - June 1977 is focusing on the orientation of vocational teacher educators, deans, and state department of education personnel from Nebraska, Iowa, Missouri, and Kansas. Specifically, the project is designed to accomplish the following objectives: (1) participants will become familiar with the state of the art in regard to CBTE, (2) participants will examine one delivery system for

CBTE, (3) participants will assess the implementation processes used in that delivery system in reference to their institutional situations, and (4) participants will explore the impact of CBTE implementation on the statewide vocational teacher education system. Procedures and materials developed by The Center for Vocational Education at Columbus, Ohio and the University of Nebraska at Lincoln were used in conducting a three-day workshop.

A second project being conducted in Nebraska during 1976-1977 focuses on "Professional Preparation for Two Year Post-Secondary Vocational Teachers" in Nebraska's area vocational schools and community colleges. A 1976 brochure carrying that title has been prepared (with the help of a special Ad Hoc Study Committee) and published by The Nebraska Advisory Council for Vocational Education. Staff from the University of Nebraska at Lincoln, the Nebraska Advisory Council, the Research Coordinating Unit, the Community College Board, Kearney State College, and the Nebraska Division of Vocational Education collaborated in the development of a statewide system that involves all institutions of higher education which are concerned with the professional preparation of post-secondary vocational and technical teachers.

The study was undertaken by the Advisory Council in response to requests from the post-secondary community colleges in Nebraska. These colleges were concerned that the professional vocational teacher preparation courses were not germane to their unique needs, and there was also a general lack of agreement among the post-secondary institutions concerning what teaching competencies were needed.

Two lists of competencies were identified by the committee: Section I of the report lists competencies recommended for preservice training sessions for prospective teachers, and Section II lists additional competencies which are considered to be "vital to proficiency in teaching." The report states that "it is significant to note that statewide agreement was reached by the post-secondary community colleges on the competencies recommended." Forms for outlining a prospective teacher's program of study and for recording his or her progress were also developed and agreed upon by the post-secondary institutions and institutions of higher education. A unique feature of the procedures established is that two basic options are available to each prospective or inservice teacher who participates. One option is the traditional nine semester credit hours of professional vocational education coursework. The second, new and alternative option, is the competency-based option whereby beginning teachers need to demonstrate mastery of at least 50% of the 28 competencies specified in Section I of the report as the initial step in meeting certification requirements. The committee further recommended that any teacher satisfactorily mastering 50% of the competencies in Section I (28 competencies) and 35% of the competencies listed in Section II (67 competencies) should be fully approved for vocational teaching.

The University of Nebraska at Lincoln was also one of the ten institutions of higher education that was selected to participate in advanced testing of The Center for Vocational Education's PBTE modules as part of the 1975-1976 National Institute for Performance-Based Teacher Education project.

UNIVERSITY OF TENNESSEE

Personnel Responsible: Stallard and Radcliff

An EPDA-funded project (1976-1977) will permit the training of approximately 150 new teachers of vocational education with the use of The Center for Vocational Education's modules as the major medium of instruction. The Department of Vocational-Technical Education staff will be working with six area vocational schools (five post-secondary and one secondary), two each from the areas of East, Middle, and West Tennessee. In addition, teachers and administrators from another ten schools will be given an overview of the project and their needs will be assessed to determine the possible need for additional training workshops.

The University of Tennessee was also one of the ten institutions selected to participate in The Center for Vocational Education's 1975-1976 National Institute for Performance-Based Teacher Education.

UNIVERSITY OF VERMONT

Personnel Responsible: Fuller and Jensen

Two statewide EPDA projects related to PBTE are being carried out at the University of Vermont, Burlington during the 1976-1977 academic year. One project will focus on the use of PBTE competencies as the basis for assessing the professional development needs of vocational teachers in Vermont. The second project focuses on the identification and preparation of qualified field resource persons at vocational schools throughout Vermont. Participants will be trained in the role of the resource person in PBTE and will be oriented to the effective use of performance-based vocational teacher education modules.

The University of Vermont was also one of the ten institutions of higher education selected to participate in the advanced testing of The Center for Vocational Education's PBTE modules as part of the 1975-1976 National Institute for Performance-Based Teacher Education.

APPENDIX E

Sources of Additional Information About PBTE

CBE CENTER CONSORTIUM

The CBE Center Consortium, sponsored by USOE, is involved in the development and implementation of Competency-Based Teacher Education models. The Consortium consists of nine National CBE Centers involved in development and implementation of preservice and inservice program models. Each of the centers also provides developmental assistance to those interested in installing competency-based programs. The consortium helps to provide leadership at the national level by coordinating the efforts of the nine centers and providing developmental assistance.

For more information, contact: Dr. John Hanson, National Consortium of Competency-Based Education Centers, 415 North Monroe, Florida State University, Tallahassee, Florida 32301. Telephone: (904) 644-2519.

THE CENTER FOR VOCATIONAL EDUCATION

The Center for Vocational Educa... located at The Ohio State University in Columbus, Ohio. The Center's research and development efforts are designed to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning and preparation. The Center fulfills its mission by:

--Generating knowledge through research.
--Developing educational programs and products.
--Evaluating individual program needs and outcomes.
--Installing educational programs and products.
--Operating information systems and services.
--Conducting leadership development and training programs.

One of The Center's R&D programs, Professional Development in Vocational Education, is helping to achieve these goals through the research, development, testing, training, and implementation of professional curricular materials. The 100 modules being developed and tested, and the associated orientation materials, student guide, resource person guide, and PBTE implementation guide are designed for preservice and/or inservice use in all vocational service areas.

For further information, contact: Dr. James B. Hamilton, Program Director, The Center for Vocational Education, The Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210. Telephone: (614) 486-3655.

THE COMPETENCY-BASED EDUCATION PROGRAM OF THE DIVISION OF EDUCATIONAL SYSTEMS DEVELOPMENT (DESD)

The primary goal of the CBE Program of the Division of Educational Systems is to maximize the potential of competency-based education for improving and reforming American education. The

program has seven major purposes: (1) to promote widespread analytical dialogue about CBE, (2) to assess the state of the art and inform the public about the results of the assessment, (3) to facilitate inter-state, inter-regional, and inter-professional sharing of promising products and processes in CBE, (4) to support some high priority experimental program models, (5) to provide technical assistance to institutions and educational programs developing CBE programs, (6) to assess the national storehouse of related educational concepts and software in order to facilitate more rapid program implementation, and (7) to establish a national network of CBE technical assistance centers.

For more information, contact: Allen Schmieder, Chief Support Programs, Division of Educational Systems, United States Office of Education, Room 3052, ROB No. 3, 7th and D Streets, S.W., Washington, D.C. 20202.

FAR WEST LABORATORY

The Far West Laboratory, located in San Francisco, California, is a center for educational research and development. The Lab is a non-profit public organization sponsored in part by funds from USOE, Department of Health, Education, and Welfare. They have been involved in many competency-based projects including a competency-based program in Early Childhood Education, a joint project with the Bay Area Teachers Training Complex (BATTC) on developing competency-based modules, and the development of mini-courses that preservice and inservice teachers may use to acquire teaching skills.

For more information, contact: Far West Laboratory for Educational Research and Development, 1855 Folsom Street, San Francisco, California 94103.

THE INTERSTATE CERTIFICATION PROJECT

The Interstate Certification Project is a project, begun in 1966, that encourages that the qualifications of teachers educated in one state be recognized in other states. To join the project, each state must enter into a standard agreement with other states that are involved in the project. Each state must also pass legislation to make the agreement possible. Finally, each state is asked to make a contract with each of the participating states. To date, there are thirty-three states participating in the project.

For more information, contact: Dr. Helen Hartle, Interstate Certification Project, New York State Department of Education, 99 Washington Avenue, Room 1941, Albany, New York 12210. Telephone: (518) 474-6442.

MULTI-STATE CONSORTIUM ON PERFORMANCE-BASED TEACHER EDUCATION

The Multi-State Consortium on Performance-Based Teacher Education was a national effort launched in 1972 and sponsored by the United States Office of Education. Thirteen states, who had all mandated PBE as a primary or alternative system for teacher education and certification, were members of the Consortium. The Consortium's PBTE newsletter, and Profile of the States in CBE helped to disseminate information on PBE activities. The Consortium also published a document on assessment, a monograph on CBE and multi-cultural education, and two CBE resource catalogues, The Catalogue of Teaching Skills, and A Catalogue of Concepts in the Pedagogical Domain. Through recent funding decisions, the work of the Multi-State Consortium is now being carried on, with a different focus and with increased state representation, by the new National Council of States on Inservice Education.

For more information, contact: Dr. James F. Collins, Project Director, National Council of States on Inservice Education, 123 Huntington Hall, Syracuse University, Syracuse, New York 13210. Telephone: (315) 423-4753.

THE NATIONAL COMMISSION ON PERFORMANCE-BASED EDUCATION

Nearly three years ago, the Rockefeller Foundation Fund made a grant to Educational Testing Service to establish a National Commission on Performance-Based Education. The role of the commission is to coordinate the varied activities in the performance-based movement and to (1) set up policy guidelines for research priorities, (2) help develop specific research proposals, (3) coordinate and interrelate the research proposals, generate funding for them, and monitor their progress, (4) stimulate the conceptualization of the interrelationships among the ideas being tested, (5) exchange information on research problems and progress, and (6) disseminate the results of their efforts.

The Commission is also creating a storehouse of information on teaching competence, its measurement, and systems of training for teacher competency. Their system attempts to identify and evaluate the kinds of material available in terms of the utility of these materials for training and their specific utility for identifying competencies whose validity might be tested. This information system is open to anyone interested in PBTE.

For more information, contact: Frederick J. McDonald, Director, National Commission on PBE, Educational Testing Service, Princeton, New Jersey 08540.

THE NATIONAL COMMITTEE ON PERFORMANCE-BASED TEACHER EDUCATION

The National Committee on Performance-Based Teacher Education is part of the American Association of Colleges of Teacher Education. The committee has published twenty-one monographs and several technical assistance papers and articles related to PBTE (i.e., the continued study of the state of the art). The Committee has also sponsored national and regional training sessions on PBTE, provided assistance to AACTE state associations in sponsoring statewide training sessions on PBTE, and cooperated with other agencies in promoting the study of PBTE.

For more information, contact: Dr. Karl Massanari, American Association of Colleges for Teacher Education, One Dupont Circle, N.W., Washington, D.C. 20036. Telephone: (202) 293-2450.

NATIONAL COUNCIL OF STATES ON INSERVICE EDUCATION

The National Council of States on Inservice Education was established in January 1976 through a contract awarded to Syracuse University by the Teacher Corps. The Council consists of 17 state education agencies including the 13 which originally comprised the Multi-State Consortium of PBTE.

The purpose of the Council is to facilitate communications between state education agencies. To this end, the council's activities will include publishing of a newsletter, developing models of collaborative interaction between state education agencies and Teacher Corps projects, commissioning of a series of monographs on issues related to inservice education, sponsoring of training workshops, hosting a national conference, and establishing a center for the distribution of teacher education materials.

For more information contact: Dr. James Collins, Project Director, National Council of States on Inservice Education, 123 Huntington Hall, Syracuse University, Syracuse, New York 13210.

THE PBTE INFORMATION CENTER

The PBTE Information Center, located in Washington, D.C. and operated by the PBTE Project of AACTE, is a center for information on all subjects related to PBTE. The Information Center contains bibliographies, lists of institutions with various kinds of PBTE programs, lists of consortia and other groups involved in the PBTE movement, and the names of resource people available in the United States. Presently, the Center is working with the ERIC Clearinghouse on Teacher Education to provide services for those interested in PBTE information.

For more information, contact: Nancy Hoagland, Coordinator, Dissemination Center of the National Committee on PBTE of the

American Association of Colleges for Teacher Education, One Dupont Circle, Suite 610, Washington, D.C. 20036.

SCHOOL LIBRARY MANPOWER PROJECT

The School Library Manpower Project is located in Chicago, Illinois. Its primary function is the administration of six experimental program models in competency-based library-media education.

For further information, contact: Robert N. Case, Director, School Library Manpower Project, American Library Association, 50 E. Huron Street, Chicago, Illinois 60611.

SOUTHERN CONSORTIUM

The Southern Consortium is a consortium of "small" institutions who develop local models of competency-based teacher education. They are also concerned with developing a dissemination program for "small" colleges interested in CBE programs.

For further information, contact: Norman Johnson, Director, Southern Consortium, North Carolina Central University, Durham, North Carolina 27707.

TEACHER CORPS

The purpose of the Teachers Corps is (1) to improve and increase educational opportunities for children in areas having concentrations of low-income families, and (2) to improve the quality and broaden programs of teacher education for both certified and inexperienced teachers. The Teachers Corps utilizes the community, institutions of higher learning, and the local educational agencies. Project interns, who are predominantly members of minority groups, are trained for two years. During this time they spend 20% of their time in the classroom, 60% in the public school setting, and 20% of their time in the community trying to gain a better understanding of the people they serve.

For further information, contact: James Steffenson, Teachers Corps, Reporters Building, 7th and D Streets, S.W., Washington, D.C. 20202.